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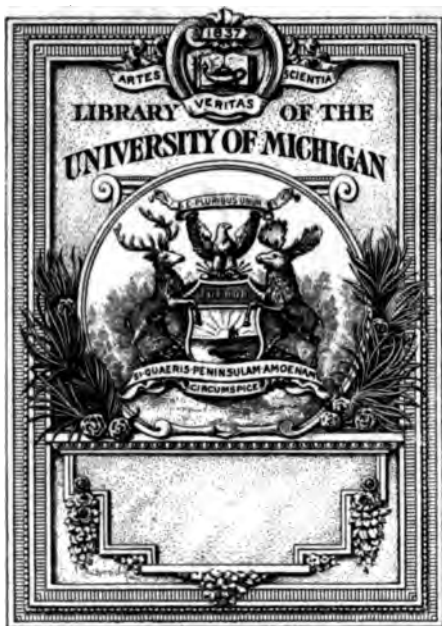
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VIRGINIA MEDICAL JOURNAL.

JULY 1859.

ART. I.—*Address delivered before the Medical Society of Virginia, at its Annual Meeting in Richmond, April 27th, 1859.*
By LEVIN S. JOYNES, M. D., President of the Society.

GENTLEMEN.—In rising to perform a duty which custom has enjoined upon your president, I seize the occasion to offer to you, one and all, my cordial salutation—to assure you of the deep interest which I feel in the objects of your association, and to express the hope that your proceedings, on this and on all future occasions, may tend largely to the promotion of aims so useful and so honorable. It is well for us thus from time to time to extend to each other the right hand of fellowship, and to take counsel together for the common good; and it is much to be regretted that at these annual gatherings, the word of welcome cannot be addressed to much larger numbers of our brethren.

The meagre attendance upon the meetings of this society, which has been usual for some years past, is well calculated to excite our solicitude; and, however unwelcome the reflection, we cannot avoid ascribing it either to indifference to the objects for which we are associated, or to an imperfect appreciation of the advantages of united effort for their attainment. A medical society should be regarded as the *representative body* of the profession—an organized union of

its scattered members, for the mutual instruction and common benefit of all; and it ought to embrace in its ranks every medical man of good standing within the sphere of its operations. With a just conception of its aims, and with a proper spirit of harmony, united to adequate energy in its management, none can deny that its influence for good would be great and enduring.

To doubt this, would be to question the power of association in the accomplishment of purposes which are sought by many individuals in common, and in giving a more potent expression to their common views and feelings. That intellectual and moral strength, which, if diffused in disjointed atoms, amid the diverse elements of society, is to a great degree powerless, voiceless, and unfelt, is by association, consolidated and quickened—converted into an active, moving force, whose influence is felt not only by the members of the associated body, but by the community at large.

The ends proposed in the formation of this society, as of others of the like character, may be said to have reference, first, to the *personal and social relations* of its members: secondly, to their *common interests*, as practitioners of the same art: thirdly, to their *mutual improvement*, as laborers in the same field of science: fourthly (it may be added), to the advantage of the *public*, for whose benefit it is that we toil in quest of knowledge, and expend our best energies of mind and body.

If such an association should foster feelings of mutual kindness and fellowship among the individual members of the profession—if it should tend, by more frequent and closer companionship, to smooth the asperities of rivalry, and to substitute harmonious co-operation for jealous and hostile competition—if it should firmly uphold and enforce the ethics of our profession, efficiently maintain its honor and dignity, and defend its just rights, before the public—if it should contribute to the advancement of science, and the promotion of learning and skill among its members, by encouraging observation and research, and furnishing the most

suitable theatre for the announcement and discussion of the results of such enquiries—if, in addition, it should lend its aid and counsel to the authorities which make and administer the laws, in the adoption of measures for the promotion of the public health, the preservation of life, the encouragement of science, and the improvement of medical education—if, I say, such results as these should flow, even in moderate share, from the well directed agency of a medical society, who will pretend that the reward would not be worthy of the effort? And who can doubt that a body so signally useful and beneficent, would win for the profession a much larger degree of the public respect and confidence than it can lay claim to at present?

And why are such results not attainable *here* and *by us*? Only because the members of our profession do not choose to make the requisite effort—because, it is to be feared, they are not moved by that spirit of brotherhood and unity which is essential to concentrate their energies, and develop their dormant capacities. What things are possible to others, of like thoughts, feelings and interest, ought to be equally possible to ourselves. The minds and hands are here, and need but the hearts to animate them. Among the two thousand physicians of Virginia, there is surely talent and acquirement enough, and individual professional zeal enough (if rightly directed) to build up a medical society, not only large numerically, but active, useful and influential—a body whose Transactions should be a perpetual record of honorable labors, and a reflection of scientific progress.

Examples for our encouragement, and models for our imitation, abound on every hand. I need hardly point you to those medical bodies in the Old World, whose operation has contributed, so long and so powerfully, to enrich the science, and perfect and dignify the art—for instance, to that academy of medicine, which (at one time styled “royal,” at another “national,” and now “imperial”) is always the arena for the exercise and conflict of the first minds of the French metropolis, and exhibits in its weekly discussions

and reports the latest phases of research and opinion ; or to those colleges of physicians and surgeons, medico-chirurgical societies, &c. in the British islands, which fulfill an office equally useful and honorable there.

Even at home—in the sister states of our confederacy—examples are to be found, which may well excite our emulation, and (may I not add) our *self-reproach*. There are medical societies around us, which have not merely a nominal existence, nor languish in hopeless debility, but live and move and have an active being—devoting themselves with greater or less zeal to the objects of their foundation, and contributing each its share to the great work of professional advancement: and the vitality which they exhibit affords the best proof that the anticipations of benefit which led to their formation, have not been disappointed.

Among the number, I may enumerate (without disparagement to others) the medical societies of the states of Massachusetts, New York, Pennsylvania, &c. ; the Boston society of medical observation ; the New York academy of medicine ; the Philadelphia college of physicians ; the biological department of the academy of natural sciences of the same city ; the Medical and chirurgical faculty of Maryland, &c. These bodies are all known to us either by the Transactions which they publish from time to time, or by the contributions to medical literature which appear in the journals under their auspices. Our old and respected neighbor, North Carolina, though late to begin, has at last entered the ranks, and with an earnestness which gives the best promise of the future. Even the younger states of the Union are taking the lead of us. It is not long since I read, in one of our leading journals, a review of the Transactions of several of our state societies—among them, those of *Illinois* and *California*. Some of you will doubtless recollect, that at the last meeting of this society, a communication was presented from the Medical society of Indiana, proposing an exchange of Transactions between the two bodies ; and some have perhaps not forgotten the smile with which such a proposi-

tion to us was received, and the merriment which attended the passage of a resolution acceding to the request of our sister society, whenever we should have any *Transactions* to exchange for hers.

Now, fellow-members, I ask if it is wise, or just to ourselves, that we should lag behind our contemporaries in striving for the useful and the good? The field that invites us to effort is teeming with as rich a harvest as theirs, which needs but the hand of industry to gather it. Besides the general topics of enquiry which present themselves to medical men in all countries; and which embrace every thing relating to the healthy and morbid structure and actions of the human frame, we find around us full scope for observation, and abundant material for mutual instruction in the diseases which are most prevalent in our midst. These, in all their varying phases, with the modifications dependent on locality, season, and epidemic influence, and the modes of treatment found most successful under different circumstances, will never cease to possess a deep interest for all whose duties bring them into daily conflict with these enemies of the human family: and no labor devoted to their elucidation will be spent in vain, or lightly valued by those whom it may the better prepare for the great work of humanity.

Of these diseases, I need only mention, as occupying the first rank of importance, *pneumonia*, *typhoid fever*, and the *malarious* or *periodical fevers*. All of us who have encountered many cases of pneumonia, especially in its asthenic forms, will be ready to admit that the last word has not yet been spoken with regard to this formidable disease—that its pathology yet affords room for investigation on some points (among them, its relations to malarious influence)—and that its therapeutics still leave much to be desired, as is sufficiently shown by the excessive fatality of certain epidemics. As it respects typhoid fever, which seems to be extending its ravages every day, and blending itself with the old familiar forms of fever, in regions where it was formerly

unknown—is its etiology well understood? Are its relations to other febrile affections thoroughly elucidated? And, in particular, has its treatment attained all the desirable precision?

The different forms of periodical fever, of supposed malarious origin, have engaged a large share of the attention of medical practitioners in this region for the last two hundred and fifty years: yet, if there exists in our medical literature a complete and satisfactory history of these fevers, with their various modifications, complications, and sequelæ, I know not where it is to be found. A considerable familiarity with this class of diseases has convinced me, that here is a mine as yet but half explored, and that the man who shall work it successfully, and give to the profession a complete history of the malarious diseases of America, based on actual observation, will entitle himself to its lasting gratitude, and earn an honorable fame.

I repeat, therefore, that there is no lack of matter before us for observation and reflection: and if the Medical society of Virginia can succeed in giving an efficient stimulus to such labors as these, it will surely accomplish a great good.

Measures, indeed, have already been adopted to this end, which, it is hoped, will not remain without result. At a meeting of this body held in Danville in April 1857, it was ordered that three committees be appointed to report on the epidemics of their respective divisions of the state—one for the country lying east of the Blue Ridge, another for the Valley, and a third for the Trans-Alleghany district. Dr. A. S. Payne of Fauquier was selected by my predecessor as chairman of a committee for the eastern division. Since the commencement of my term of office, a similar position has been offered to, and accepted by Dr. John Fauntleroy of Clarke county, for the Valley. In the Trans-Alleghany region, it has been hitherto found impossible, among the few members of the society there resident, to find any gentleman of known qualifications, who was willing to act as chairman of such a committee. Possibly, better success

may attend future endeavors. And we may anticipate from the labors of such committees, if faithfully and diligently performed, a large amount of valuable practical information, touching the diseases which prevail throughout our widely-extended commonwealth.

Perhaps advantage might result from an increase of the number of committees. If a smaller area of country were assigned to each, as the labor of obtaining the necessary materials for a report would be lessened, the likelihood of a punctual and efficient performance of the duty would be proportionably increased.

Another step in the right direction was taken at our last annual meeting, in the passage of a resolution for the appointment of two gentlemen at each meeting to *read essays* at the subsequent one, upon subjects to be chosen by themselves.

The society has thus done what seemed best to elicit contributions of real interest and value; and it remains with individual members to decide how far the effort shall yield its legitimate fruits.

I would take the liberty of suggesting that the annual choice of a *subject for discussion* at the next meeting, might prove advantageous, by directing the attention of members to special topics of enquiry, and inviting a free and friendly interchange of opinions with regard to them—a sort of conference, which could not be otherwise than highly beneficial, by leading us to think, and perhaps read and investigate.

If the financial condition of the society were such as to justify it, an *annual prize* (like the Boylston prize of Massachusetts, or the Fiske fund prize of Rhode Island) for the best essay on a given subject (which should be one affording room for real and substantial additions to our knowledge), would perhaps be the best means that could be devised for awakening a spirit of enquiry among our brethren, and imparting a renewed interest to our meetings.

There is the point, gentlemen. We must find means of investing the periodical assemblages of this body with addi-

tional attractions. Our brethren at a distance must be made to feel that they derive some positive advantage from an attendance on them: they must be led to anticipate, that to the pleasures of personal intercourse will be added those of intellectual gratification and professional improvement. If this can be accomplished, there will be no difficulty in extending widely our circle of membership, and annual throngs will gather at our call.

Gentlemen—I commend this subject to your earnest consideration, assuring you of my hearty sympathy, and my readiness to co-operate with you in any measures designed to elevate the Medical society of Virginia to a position worthy of the state whose name it bears, and worthy (I may add) of her medical men.

I cannot conclude these remarks, without expressing my gratification at the direction which has at length been given to the question of reform in medical education; and I think the occasion is one of felicitation to the profession at large. After some twelve years of ineffectual discussion, the American medical association, at its last annual meeting in Washington, invited the several Medical colleges of the United States to send delegates to a convention to be held for the purpose of devising a *uniform system of medical education*, and referred to such convention, for its consideration, the report of the special committee of the association on this subject, with the request that the result of its deliberations be communicated to the next meeting of the association in May 1859. This proposition was promptly acceded to by the delegates representing medical colleges in the association; and Monday the 2d of May (the day preceding the meeting of the association in Louisville) was the time fixed upon for the assembling of the proposed convention.

At last, then, the subject of educational reform has assumed a *practical shape*. It has been committed to the only tribunal competent to consider it, with a full knowledge of its merits and its difficulties, and to give it a final and practical solution: and it is much to be regretted that this re-

ference of it has never been made before. For the powers of the association in reference to this grave matter were merely advisory, or recommendatory, not legislative or compulsory. It had no authority to enforce its recommendations on any school; and it was idle to expect any one school, or any small number of them, to make any important and permanent improvement in the system of instruction; for such changes would but drive students from their halls into those of their less stringent rivals, and thus the cause of sound education would be in no degree benefited. Most of you doubtless recollect that the oldest and long the most prosperous school in the country, did endeavor, a few years since, to establish, in accordance with the demands of the association, a six months' course of lectures; but, failing to receive that support from the profession which it had a right to expect, it was compelled, after one or two years' trial, to recede to its former position, in order to retrieve its waning fortunes.

It was only from *united action among the schools*, that any really beneficial result could at any time have been expected. If there is to be any important change, they must *all (or the greater number)* concur in it. The schools of a single city, or a single state, cannot advance by themselves, unless they be upheld by the strong arm of the law—unless they receive efficient *protection* against the ruinous competition of more facile aspirants for public patronage. But, in a country like ours, with so many separate sovereignties, and with such an impatience of all restrictions upon the “largest liberty” in every thing, such legislative interference in behalf of a right system of medical education is hardly to be looked for.

Our hopes, therefore, must rest on a concert of action among the schools, under the friendly counsel and encouragement of the American medical association. If they will work together in harmony and sincerity, much may be done to remedy evils, of which none can deny the existence. We cannot reasonably hope that they will at once organize

a *model system*, comparable in point of completeness to those of the great schools of continental Europe. *This*, if it shall ever be practicable in the United States, can only be the work of time. But some decided steps forward may be taken at once. In my opinion, the colleges *can* and *ought* to accede, without delay, to all the recommendations of the association, with a single exception.*

The conclusions of the report of the committee on medical education, already referred to, are in these words:

“*First.* Primary medical schools should be encouraged; but as office instruction will continue to be sought by students, practitioners should either give them the necessary advantages of demonstrations, illustrations and recitations, or, if not prepared to do so, they should refer them to such primary schools or medical men as will give them proper instruction.

Second. The number of professorships should not be less than seven, viz: a professor of anatomy and microscopy, physiology and pathology, chemistry, surgery, practical medicine, obstetrics, and materia medica.

Third. There should be but one term annually, which should commence about the first of October, and close with the March following, thus lengthening the term to six months. The commencement of the term, in October, should be uniform in all the colleges throughout the country. During the session there should never be more than four lectures given daily.

Fourth. The qualifications for graduation, in addition to those now required by the schools, should be a liberal primary education, and attendance upon a course of clinical instruction in a regularly organized hospital.”

There is but one of these recommendations which may not be immediately carried into effect, if the schools are

* It is hardly necessary to explain, that there are some few medical schools in our country, whose peculiar organization, with reference to the number of professorships, and the length of the lecture term, renders these remarks only partially applicable to them.

willing to make an earnest effort to improve the prevailing system of education. I refer to that which enumerates, among the necessary qualifications for the degree, "*a liberal primary education*." By this term is meant, I presume, a complete classical, mathematical and scientific education—in other words, a *collegiate education*.

Now, without in the least degree questioning the abstract propriety or desirableness of such a requirement, I do not believe that its enforcement is as yet practicable in this country; nor will it ever lead to any beneficial result, until the state governments are willing to come to the support of the schools, and to exclude from the profession, by strong prohibitory laws, all but regularly qualified practitioners.

But, with this exception, the propositions of the association are not only moderate and reasonable, but entirely feasible; and I therefore look forward with the deepest interest to the convention of schools which is to assemble in Louisville on Monday next. Let us hope that its counsels will be frank and public spirited, and its action harmonious and efficient. Let us hope, also, that its action, if in the right direction, will receive the unequivocal approval and endorsement of the American medical association. Good faith requires this—the true interests of education demand it. The schools must be sustained and encouraged in their efforts at reform. The profession must not turn its back upon those which seek in good faith, and at their own peril, to elevate the standard of instruction; else there will be an end forever to all prospects of amelioration, and all reliance upon the *sincerity* of the reform movement will be lost.

Let us not anticipate, however, any such shortsightedness or injustice. Let us rather trust that every honest endeavor on the one side, may be met by a hearty and encouraging response on the other, and that the schools and the profession, instead of regarding each other with the jealousy of enemies, may exhibit the harmony and mutual confidence of friends allied by a common interest.

ART. II.—*On the Blending of Types in Fever.* By CAUTHORN
ARCHER, M. D., Henrico County, Va.

It is a matter of general experience, that within the last 15 or 20 years, there has been a marked change in the character of fevers prevailing in this section of country. The remittent and intermittent types have given place, in a great degree, to the continued or typhoid forms. Formerly, during the autumnal months, those residing near the banks of our rivers were almost invariably attacked with remittent or intermittent fevers. Very often the operations of the agriculturist were seriously affected by the prevalence of these fevers, and the latter part of the summer and early portions of the autumn were looked forward to with deep anxiety. So generally experienced were the effects of the malarial poison, that I remember hearing an old and experienced physician say that it was seldom a person who had been raised in lower Virginia did not exhibit enlargement of the spleen. At the present time bilious fevers are rarely met with, and intermittent fevers have become the exception and not the rule. It would be both interesting and useful to institute an enquiry into the causes which have produced this change, if it fell within the scope of my present design. Unquestionably, some of the most efficient causes which have operated to produce this change, are the increased attention paid to the cultivation and drainage of the lands and the extensive application of lime. It is not improbable, moreover, that the malarial poison, which is generally admitted to be of vegetable origin, may be exhausted by the continued cultivation of the soil.

Without discussing this subject any farther, I will proceed to the more immediate object of this communication, which is to detail some cases illustrating the blending of the malarial with the continued or typhoid form of fever. That malaria complicates many forms of disease and impresses upon them peculiar characters, has long been known to the

profession. Numerous cases have been recorded, in which inflammations of the various organs have been so complicated by the malarial poison as to present unusual symptoms, and require a corresponding change in their treatment. I am not aware that a complication of the malarial and typhoid forms has been so generally observed, as I have seen no mention of it in the most popular treatises upon typhoid fever. This may be owing to the fact that typhoid fever has prevailed principally, and been more particularly observed in sections of the country less subject to the malarial forms of fever. Another reason probably operating is, that physicians are frequently not called in during the early stage of the disease, and when seen, the case has assumed the characteristic symptoms of typhoid fever. Andral, in his Medical clinic, records a case of typhoid fever, which, during its course, presented all the symptoms of ordinary bilious fever, though the post-mortem examination exhibited the lesions peculiar to the former disease.

I will now proceed to detail some cases of typhoid fever, in which symptoms of ordinary intermittent fever first appeared, and were succeeded by symptoms of well marked typhoid fever.

The first occasion upon which I met with this combination of symptoms, was in the county of Amelia, in the spring of 1853. A very severe epidemic made its appearance in the family of a friend. Several members of her family (servants) died, and the daughter of an intimate acquaintance, about 12 years of age, who was boarding in her family, having been attacked with it, I was requested to visit her. I first saw her upon the second day of her illness. There were well marked symptoms of pneumonia, for which she had been bled by the physician who was in attendance. Without entering into a detail of all the symptoms, it is sufficient to say that there were periodical exacerbations of fever, attended with delirium at night, which was easily controlled by opiates.

Another young lady boarding in the family was also labor-

ing under the disease, the fever presenting the same characteristics, but without any pneumonic symptoms. In the course of three or four days the disease seemed about to enter upon convalescence.

I had been informed that one of the prominent characteristics of the epidemic, was that in the course of four or five days after the commencement of an attack, the patient appeared rapidly to improve, but that in the course of a few hours after the commencement of this apparent convalescence, and when all seemed going on well, a chill would come on, and the case almost invariably terminate fatally. I therefore determined, as soon as the remission occurred, to commence the administration of the sulphate of quinine. As at that time I was impressed with the idea that quinine was a stimulant, I gave only 7 grains in 3 doses, which did not prevent the occurrence of the chill, which commenced at 2 P. M. (She had taken the quinine early in the morning.) It was attended with cool skin, quick, weak pulse, obstructed respiration and muttering delirium. A large blister was applied to the chest, sinapisms to the extremities, ammonia, camphor and milk toddy freely given, and about 5 A. M. next morning she emerged from the collapse. Quinine was freely given for several mornings afterwards, and she recovered without any more difficulty.

The late Dr. B. H. May of Petersburg had been sent for on the evening that the alarming symptoms had made their appearance, but did not arrive until 10 o'clock A. M. the next day. He fully concurred in the use of the quinine, and in regard to the nature of the disease.

CASE II.—Sept. 10th, 1857.—I was requested to visit Beverley, a negro boy about 10 years of age, who had been sick for two or three days. At the time of my visit (evening) his pulse was slightly accelerated; tongue coated; bowels costive, with some abdominal tenderness. A small dose of calomel was given at night, attention to diet enjoined, and quinine directed to be given on the following morning.

Next day his condition appeared improved; fever much less and bowels open. He was directed to take quinine again next morning.

12th, 8 A. M.—Patient had had a slight rise of fever the evening before, but was at that time entirely clear of fever. In consequence of the next day being very stormy and the patient appearing so much better, I did not see him. On the 14th I found him much worse; considerable fever; pain in the bowels increased, and localized in the right inguinal region; tongue red at tip and edges. His mistress informed me that he had a return of the fever on the evening of the 12th, which continued on the 13th, on which day she gave, on her own responsibility, a dose of calomel, which, however, did not operate excessively. I regretted its administration, as it certainly was unnecessary, if not positively injurious. The case now assumed all the characteristics of typhoid fever—dry, red tongue, thirst, anorexia, quick pulse, tympanitis and diarrhœa, terminating fatally about the 30th day.

CASE III.—Lewis, slave of Mr. H——, aged 23, was taken sick on the 19th January 1858. I first saw him on the evening of the 22d, when he informed me that he had been having chills since the 19th, and had had one that morning. At the time of my visit his condition was as follows: headache; pulse 90; skin warm; tongue clean and moist; some diarrhœa, with pain in the right iliac region. Opium and quinine were given at night, and he was directed to take quinine in the morning before the paroxysm.

23d, 10 A. M.—Lewis had slept well; only one stool; no pain; tongue clean; no fever. I directed the quinine to be repeated next day, and to be informed if he had any return of indisposition. I did not see him again until the 27th, when I found him with diarrhœa, pain and gurgling in right iliac region, dry, red tongue and quick pulse. The symptoms of typhoid fever were now fully formed. After the lapse of eight or ten days the patient seemed convalescing,

when severe hemorrhage from the bowels set in, which, though promptly checked by opium and acetate of lead, left the patient so prostrated that he sank in the course of a few days.

I have met with several other cases in which typhoid fever was ushered in by apparently simple intermittent fever, and in which, after being apparently checked by the use of quinine, the typhoid symptoms developed themselves, and followed their usual course.

The foregoing cases I thought fully illustrated the subject.

ART. III.—*Notes of Surgical Cases.* Reported by CHARLES BELL GIBSON, M. D., Professor of Surgery, Medical College of Virginia.

Strangulated Inguinal Hernia, complicated with non-descent of the Testis—Operation.

CASE I.—Phil, slave, in the employ of Mr. Lyons, æt. 35, was admitted to infirmary of Medical college of Virginia, December 16, 1868, at 4 P. M.—a powerful man, with general health perfect.

While engaged in the morning, lifting a heavy barrel, he felt something give way in the right groin, and shortly afterwards discovered a tumor in that region.

A medical gentleman visited him, pronounced the case hernia, and made an ineffectual attempt at taxis. He was seen by me about 6 P. M. The tumor was just outside the external ring, having no tendency to descend, but spreading towards the symphysis pubis, and towards the ileum, and nearly as large as his fist. On making taxis, something peculiar in the feel of the tumor arrested attention, and upon examining the scrotum of that side, it appeared that the

testis had never descended. It was this body which gave the peculiar feel to the hernial tumor.

Every expedient was used to effect return of the protrusion, without success. The patient in the mean time had no particular distress, and the night of the 16th passed without special demand for operative procedure, and so did the day of the 17th.

This period was passed in the usual attempts to ascertain the permeability of the intestine.

On the night of the 17th symptoms of strangulation appeared, and early on the morning of the 18th the operation was performed.

The protrusion, consisting of intestine and omentum, but principally of intestine, was found in fair condition, and spreading nearly horizontally, as I have said, extensively to right and left of the ring, from a very narrow neck. On being raised, the testis was found lying underneath this mass, and only a line or two from the edge of the ring. This state of things made the conclusion irresistible, that even in the absence of stricture, or if the mass of protrusion had been much smaller, the pressure of the testis in this position must have effectually opposed reduction of the hernia. In fact, on making direct taxis, it was plainly seen that the testis directly blocked the way against the return of the intestine.

It is almost strange that it had not prevented the protrusion through the external ring. The protrusion was readily returned on division of the stricture.

I confess now to some hesitation as to what should be done with the testis, and to a decided inclination to remove it. But an unwillingness to risk complication of the danger of the operation, besides the feeling that I had no right to castrate a man without his consent, or that of his master, prevailed against the temptation to lop off this misplaced testis. So the edges of the incision were brought together with a few sutures, covering in the testis; and repair took place partly by adhesion and partly by granulation, the process of granulation being somewhat more tardy than usual.

About the 1st of February Phil left the infirmary, wearing, very comfortably, a truss, which, fortunately, seemed to promise protection against a second protrusion, whilst just avoiding pressure upon the testis.

Cataract.

CASE II.—Miss A. T. M——, æt. 54, having double cataract, consulted me on the 26th January 1858, and gave this history of her case :

When she was between two and three years old, her father's house was struck by lightning, and several members of the family were more or less injured. One of her brothers, four or five years of age, and previously in perfect health, was instantly jaundiced, and she herself had as instantly a cataract formed in the left eye.

The right eye remained unaffected until about two years ago, when vision began to be impaired, and cataract is now fully developed in it.

I found two soft lenticular cataracts, and determined to operate by "division and solution."

Both eyes were operated upon on the 28th of January. The lenses were easily broken up, and during the operation satisfactory evidences of perception of light made the prognosis favorable.

The operations were repeated in April, to break up certain obstinate fragments, which had so far resisted solution.

Between the periods of the operations, the condition of the eyes was very promising. Perception of colors, and even an occasional recognition of features of friends, seemed to cheer the patient, whilst the surgeon indulged in strong hopes of entire restoration of sight.

Miss M.'s residence being at a distance, prevented my seeing her frequently, but satisfactory intelligence of her improvement now and then reached me.

Finally, in May of this year, she paid another visit to Richmond. I found the pupils entirely clear and active,

and vision quite good. It was plain that she only needed two artificial convex lenses to enable her to see any thing and every thing.

From the stock of Messrs. Mitchell & Tyler were selected, after careful trial, two sets of lenses, of a higher and a lower power. With the lower power Miss M. recognizes every object around her, and can read large print, and with the higher power, more rarely used, she is able to read the finest print usually found.

There are two points of interest in this case, which are, perhaps, rarely met with.

One is the unusual cause of cataract in the left eye—lightning—and the other is the perfect condition of the function of the retina, after so many years of disease.

TRANSLATIONS AND SELECTIONS.

I. *The Dress of the People*. (From the British and Foreign Medico-Chirurgical Review.)

MAN, as regards the surface of his body, a very few parts excepted, differs from all other animals breathing by lungs and having warm blood, in possessing no natural protection from inclemencies of weather, neither from great heat or great cold, from the tempestuous blast or the pelting shower. Naked he comes into the world, left to his own intellect to supply those requirements which nature has secured to other animals not so highly gifted with reason, and this with a wonderful and very instructive adaptation, according to the exact quality of climate or kind of element (whether water, land or air) they may inhabit. Thus, in the icy waters of the Arctic seas, the aquatic mammalia (the walrus, the whale, the seal) are as it were insulated from the frigid element in which they swim, by thick strata of oily matter. The land animals (such as the bear, the fox, the musk ox) are protected from the intensely cold atmosphere they are exposed to, by an abundant covering of hair.

The birds (the few that spend the winter within or near the same circle, or the many that resort to it during the genial season) are admirably guarded against the cold air by a dress of feathers of an elaborate kind, constructed and arranged so that whilst they retain with as little loss as possible a high temperature, they add but little to the weight, and increase greatly, as regards specific gravity, the buoyancy of their muscular bodies. These are admirable examples of clothing, where animal life is endangered by the intensity of external cold. If we change the scene to the tropics, or the bordering regions as remarkable for high temperature, and the powerful influence of the sun, we have examples of a different kind hardly less noteworthy. In the native animals we no longer find the warm furs or the copious shaggy hair of the northern creatures; instead, we see animals with thick skins and sparse hair—such as the pachydermata—or with delicate, perspirable skins and short hair—such as the simiæ, not to mention other species—all in their natural covering, equally adapted to the exact climate in which they are found.

How different is the condition of man—how singularly contrasted! He, designed evidently for all climates, and actually inhabiting the most diverse, bears in his outward appearance but slight marks either of the physical impress of climate on him, or of any special qualification for braving with impunity its varied agency. Thus, bringing us back to his nakedness, and how he of all animals is the one, the only one, designed by his Creator to provide himself with clothing, left, as we have said, to the guidance of reason to adapt his dress, according to varying circumstances, to his wants.

Let us glance at the manner in which, apart from fashion, this his reason has been exercised, commencing with extremes, which are often most instructive. The Esquimaux and the Hindoo are good examples, the climate inhabited by each being too tyrannical to allow of the play of fancy in habiliments so as to render dress in its qualities subordinate to usefulness. As in the instance of other animals, so in that of man; the pressing call in the Arctic regions is the preservation of animal warmth; in the tropical and bordering regions the moderation of animal heat, and protection from the sun's rays and the hot winds. The Esquimaux, we find, uses no flowing robes like the Hindoo, and the Hindoo as carefully abstains from close covering garments, and nature provides each with materials best suited to his wants—the former, with the skins and warm furs of his own animals;

the latter, with light and cool tissues fabricated by textile art from cotton and silk, the produce of his own plains.

If we now extend our view to other countries in which the climate is almost equally imperative—such as that of the Arabian desert—such as that of our own shores—in the one we find the Bedouin in his loose, flowing burnouse, his head well protected by the many folds of his turban from the intense rays of the sun, and his loins well girded and guarded by the many rolls of his sash, equally from the trying vicissitudes of day and night, from the hot blast, and from the chill breeze; on the other, our own coast, we see the hardy fisherman and pilot clad in the short dreadnought jacket—a defence against wind and spray—his legs encased in water-proof, well-oiled boots, and his head helmeted in leather, overlapping behind, protecting the neck from wet and cold. The miner affords another example of man clothing himself according to reason, under circumstances affording free scope for its exercise. Descending to a great depth in our mines of copper, and tin, and coal, the temperature increasing with the depth, he has to put forth all his strength in a confined atmosphere, humid and hot, rivaling the sirocco in heat and moisture; he selects for his dress one that is light, moderately loose, and formed entirely of wool, which, however wet it may become from the sweat of his own body, and from the roof-drippings, will prevent his being chilled.

To these examples of rational clothing it would be easy to add instances of the contrary; they are chiefly to be met with in temperate climates, these not exacting ones, like the preceding, and amongst people variously occupied and of vastly different conditions as regards their place in the social scale, and more or less subject to the disturbing influence of that tyrant of all tyrants—fashion. It is amongst people such as these that dress in its complications becomes a serious study. Giving our attention to the subject under this point of view, we shall consider not what is in use, but what seems to be wanted, so as to render dress most conducive to health, or in other words, best adapted to the warding off of disease.

Physiologically, as regards man's organic structure, what are the requirements? Are not the following some of the principal? That the feet should be kept cool, not cold (we think this and the following compatible with the well known Boerhavian aphorism); the head warm, not hot; the neck, if at all, moderately and not closely or tightly covered; the abdomen supported by an elastic girding; the chest free,

loosely covered, allowed to have its natural play of action in performing the function of respiration. The manner in which the head in both sexes is provided with hair, flowing, when allowed, over the neck, seems to point to the conclusion which we have come to; and the peculiar nakedness of the feet favors, we think, the inference we have made respecting them. That the head will bear much warmth, and may need to be kept warm, seems to be shown not only by its own high temperature, but also by the healthy action of the brain of those who as a part of their professional costume are under the necessity of wearing wigs; and the adoption of the turban amongst eastern people, in countries where the sun's rays are intense, and this with marked advantage, may be adduced in confirmation. That coolness of feet is wholesome, we think is proved by the general good health of the peasantry, whether Scotch or Irish, who go barefooted, and also by the feeling experienced whenever the feet are unduly hot, amounting almost to torment. As in the finest machines, in highest order, when in action, there is least friction, most ease of motion—so in life, when the functions are best performed, are in their healthiest state, there is least sensation: and to speak generally, is not that mode of dress the best which preserves the body in the happy neutral condition—a *via media* between heat and cold? We make the remark, moreover, with special application to the extremes, the head and feet—those opposite parts in their requirements, as well as position, and to qualify the preceding observation, liable to be questioned as paradoxical, respecting the temperature, as most approved of these parts, adding, that by coolness and warmth, as we use the terms, we would imply merely such a degree of each as is hardly perceptible—such a degree as the sensuous faculty is hardly conscious of, no more so than the respiratory organs or the heart when their action is most healthy. As to the propriety of leaving the chest unshackled, the reason is most obvious, and the affording of support to the loins and lower belly is hardly less matter of reason, remembering the nature of the contents, the yielding quality of the parietes, and the weakness of certain parts of them—parts in which, under muscular exertion, the danger is ever impending of rupture. A favorite position of the arms is the folding them over the abdomen, a position in itself affording warmth and support; and amongst a people supplied with little clothing, the attitude, judging from our own experience in eastern countries, is most common, especially in the cool of the early morning.

These premises granted, disapproval follows of all tight lacing, confining the chest, so often practiced by those of the female sex, more regardful of an imaginary beauty of form than of health, without which there is no satisfactory beauty; and also of that excessive attention to the feet to keep them dry by the use of clogs, water-tight and heating, and confining the natural moisture of perspiration, when taking exercise deserving of the name.

Other circumstances require consideration, and of these the most important perhaps, in connection with dress, are the different periods of life, the different seasons, or whether taking exercise or repose.

Physiologically viewed, as regards animal heat, there is a difference observable, comparing infancy with old age, and these two periods of feeble life with that of mature age, one of established strength and power of endurance. Both extremes, it would appear, are most easily chilled, or in other words, lose their normal temperature soonest when exposed to cooling influences, unprotected, and are liable to suffer in consequence. A distinguished physiologist sums up the results of his researches on this point, in the conclusion, "that the power of producing heat in warm blooded animals is at its minimum at birth, and increases successively until adult age."* Admitting this, how much is to be deprecated the too frequent practice of clothing children scantily, and especially the leaving exposed the upper and lower parts of the trunk. How contrary to reason is it that those parts which in the firm adult are covered and protected, in the child should be left defenceless! How often, how very often, may fatal diseases have been owing to such want of judgment, the parts alluded to being in early life very susceptible of diseased action—an action having its issue in some of the most formidable complaints of childhood. The so called, and most improperly called, hardening system, is full of danger, and mothers cannot be too strongly cautioned against it. How well very young children bear warmth is shown by their flourishing health, even within the tropics, provided the locality be free from malaria. Even the farmer, the breeder of stock, is become sensible of the evils of the system, so improperly named, and of the advantages of the opposite procedure in the instance of young animals. The approximation of old age to infancy in susceptibility of cold, and the need of warm clothing, are so well known as not to require proof. The warm bed, the fireside, the padded vests,

* Dr. W. F. Edwards on the Influence of the Physical Agents on Life.

are the requirements of the old, and are most willingly, as it were a right, given to and adopted by them. Even with advancing age, it should be kept in mind that susceptibility of cold, or risk of suffering from a lowering of temperature, is an established fact. This is demonstrated by the mortality tables of the registrar general. We quote the words of Dr. Farr. He says:

“The power of cold on life varies according to definite laws; the general result being, that the danger, after thirty, of dying of cold, is doubled every nine years of age; for out of the same numbers living, to one death by cold at the age of thirty, there are two at thirty-nine, four at forty-eight, eight at fifty-seven, sixteen at sixty-six, thirty-two at seventy-five, and sixty-four at eighty-four; a series which represents the relative mortality by cold at these respective ages, during five weeks amongst two millions and a half of people.”

Of the demands on dress connected with change of season, little need be said, the propriety of some alteration is so obvious to the senses. If there be any difficulty in regulating the quantity and quality of clothing, according to atmospheric temperature, it is most experienced in spring and autumn, in which seasons, in our climate, a hot day is not unfrequently followed by a cold night, and changes of a trying kind of many degrees of the thermometer, are not uncommon between sunrise and sunset. Prudence then dictates, especially in the instances of the young and delicate, the avoidance of any sudden and great alteration of dress, and the adoption of a graduated one, inclining rather to excess than deficiency, the one risking less than the other. In the east, where the natives are so attentive to clothing for warmth sake, duly valuing its importance, it is even amusing to see how many changes of dress are sometimes made by the sensitive Oriental at these seasons in the course of a few hours, and at all seasons when taking or resting from active exercise.

As to exercise and repose, in relation to clothing, much may be said, for the common notions on the subject are not such as science, we think, authorizes. How general is the practice, in preparing to take exercise, to put on an additional garment, and that sometimes a heavy one, and on returning, after being warmed or heated by the exercise, to throw off that garment. The contrary, in most cases, would be more judicious, as is practiced in the east, inasmuch as muscular exertion (we speak, of course, of active exercise) accelerates the heart's action, accelerates respiration, and increases the temperature of the body. We have found it,

tested by a thermometer placed under the tongue, to rise rather more than one degree after brisk walking or riding, to such an amount as to occasion perspiration; and this with a quickening of pulse of from twelve to forty beats in the minute, and of respirations of from one to seven in the same space of time. For detailed experiments illustrating the effect of exercise on the temperature and on the heart's action, we would refer to two of the papers given in the heading of this article.* In the same papers will be found results, proving also that with rest the temperature falls, and generally the lowering is the greatest, the higher the temperature had previously been, indicating, we think, clearly the propriety of rather adding to our garments than the diminishing of their number on taking repose. And here we would offer a word of caution in connection with the difference of effect of active and passive exercise, and concerning the clothing suitable. As we advocate a lighter dress in the one instance, so we would a heavier, a warmer in the other, inasmuch as in the act of taking what we call passive exercise, such as that obtained in slow walking or in slow riding, or in a carriage drive,† the tendency is to a lowering of the temperature, and, at the same time, of the heart's action and the lungs. We may refer to the paper just quoted, for experimental proof of this statement.

Before advancing further, it may be well to consider briefly the qualities of the more important ingredients of textile fabrics used in dress—such as silk, wool, cotton, flax. Some idea of their importance in the way of clothing may be formed from the amount of each imported; which, in 1847, was as follows: Cotton, 869,335,024 lbs.; flax, 188,848,592 lbs.; raw silk, 12,077,931 lbs.; wool, 127,390,575 pounds.

On the other properties mentioned, we must be brief. That the quality of radiation is not an indifferent one in relation to dress, cannot be questioned. As a rule, it is well known that the worst conductors of heat are the best radiators. Were it otherwise, the uses of both classes would be diminished: the polished silver tea-pot would deservedly fall into discredit, and the flannel dress might even become

* On the Temperature of Man in England and within the Tropics: Philosophical Transactions, 1845-1850.

† Of the effect of exercise in rail way traveling we cannot speak so decisively as above, but we are disposed to believe that in most instances it is the contrary of sedative, and more so in second and third class carriages than in first class—in the latter the motion being less felt. We believe, from the few observations we have made, that the pulse is commonly accelerated, and this even in carriages of the first class.

oppressively heating. Those who have not made the trial would probably hardly believe that a polished metallic vessel, filled with hot water, will be accelerated in cooling by giving it a covering of flannel. This radiating power of flannel, in addition to its bad conducting quality and power of absorbing hygrometrical moisture, with evolution of heat, renders it, we may remark, admirably fitted as an article of clothing, not paradoxically, as at the same time warming and cooling, but as a moderator and regulator of temperature.

The different degrees of inflammability of the common materials of dress are easily shown by one or two simple experiments. We allude to silk, wool, flax and cotton. If a slip of each, in a woven state, is placed on a support of platinum foil and held over the flame of a candle, the silk and wool will become charred without inflaming, whilst the cotton and linen will take fire and consume with flame; but of the two latter, the cotton more readily and rapidly than the linen. Further, if slips of each be wound round a copper wire of one-fiftieth of an inch in diameter (we particularize because it is an experiment), and used as a taper, the cotton, brought to the lighted candle, will inflame readily, and held perpendicularly will burn to the bottom, leaving only the trace of a white ash; the linen will do the same, but slower, leaving a similar ash; but not so the woollen and silk—these hardly break into flame; the flame, when it occurs, lasts only for a moment, and leaves a coal, which burns with difficulty and soon goes out. The application of such results as these to dress, especially to women's dress, entailing so much danger of person from fire, are so obvious as to require no comment. It would be well were the subject brought forward and illustrated by experiments before popular audiences. The demonstration through the eye would probably be more impressive than any words, even if uttered by the most persuasive of orators.

As to fitness of the materials for washing, it may be sufficient to remark, that in point of degree there is but little difference between them, with the exception of wool, which from the structure of its fibre, not smooth like that of silk, cotton and flax, but having minute processes or offshoots, is subject to entanglement or felting, giving rise to a shrinking of superficies with increase of thickness; but which fortunately can, to a considerable extent, be prevented by peculiar modes of washing and drying well known to the skillful laundry maid. Here we would offer a passing remark on a laundry practice much to be deprecated—the use and abuse

of starch, sacrificing thereby a great amount of valuable food, and at the same time, by its hardening, stiffening effect when applied to articles of dress, rendering them colder and less agreeable to the feel. Even our towels and pocket handkerchiefs cannot escape the addition, as may be proved by testing them with iodine.

Another property, the last we shall advert to, as influencing the materials of dress, is color. Its influence is most strikingly witnessed in the heating effects of the sun's rays. From the experiments which have been made, all of them of a simple and conclusive kind, it would appear that, *ceteris paribus*, dark colored bodies become soonest and most heated on exposure to the sun, varying with the degree of intensity of color, the extremes of the scale being black and white. It also appears to be proved that when the sun's rays are absorbed by a dark surface, the heat evolved ceases to be radiant in a great measure, and loses, consequently, its peculiar powers, one of which is that of exciting inflammation, as witnessed in sun-burn. These are facts applicable to dress, especially in a hot climate. They tend to show that, for protection's sake, the two colors should be used at the same time—white in the outer garments exposed to the sun's rays—black in the inner clothing, to prevent these rays from acting injuriously on the skin. In the African, with a black skin, there is a strong taste for white clothing: in the instance of the Arab horse of purest breed, the hair is white, the skin black; and universally, as regards the effects of the sun's rays, whilst they conduce to the bleaching of the hair, they equally contribute to the darkening of the skin. This is well witnessed in the cotter's child left to his own enjoyment in fine weather, *sub dio*, bare-headed and bare-footed, in the darkening to nut-brown of his complexion, and the lightening, often to whiteness, of his hair. We remember how we once gained a little credit with a friend, peculiarly sensitive of the sun's rays, and suffering from them, by suggesting an umbrella constructed on the above principle. He had the courage to spread his protector with its contrast of colors—white outside, black inside—and he assured us of the most satisfactory result as to his comfort. Confirmation is readily obtained experimentally. We shall give an example: Four vials, of the same form and size, were charged with a prepared mixture consisting of weak mucilage and a little nitrate of silver, and exposed to the sun's rays: one (No. 1) was left uncovered; one (No. 2) was covered with white silk; one (No. 3) with black silk; one (No. 4) with white silk over black silk; and one (No. 5)

with tin foil. Examined after three hours, the fluid in No. 1 had become almost black, its temperature 75° ; No. 2, dark brown, temperature 68° ; No. 3, only just perceptibly colored, temperature 75° ; No. 4, just perceptibly colored, temperature 69° ; No. 5, just perceptibly colored (the foil had some minute holes, allowing the passage of some rays), temperature 71° . The air at the time was 61° ; water in a vial, without the addition of mucilage and nitrate of silver, was 64° .

Amongst the conditions we have passed over as influencing a choice of the materials of dress, are durability and market price; important as these are, they hardly here require comment—the one being fluctuating, and the other depending much on the quality of the fabricated tissue, whether made of coarse or fine thread; and neither of them *per se* having any bearing on the question of health.

We have given some examples of rational clothing in the instances of certain people and classes left to their own free will and judgment. We shall now advert to an example of an opposite kind, an instance in which neither the free will nor the judgment of the individuals concerned are any wise consulted. We allude to the dress of our troops—their uniform—a term very appropriate indeed! and that both for commendation and censure; the former, inasmuch as a certain uniformity of dress is necessary for men acting together; the latter, inasmuch as the dress is too little varied according to the exigencies of circumstances, especially of climate. How irrational is it that regiments serving at home and in the West Indies should be obliged to wear the same description of clothing—the same cloth coat, the same cloth trousers, of the same shape in both countries, equally tight, and the former equally buttoned up. The dress contrived in the one country, and tolerable there, in the other becomes almost intolerable. The consequences are serious: the efficiency of the soldier is diminished and his health endangered. On the march, within the tropics, and even on ordinary parade, he suffers unduly from heat. In quarters, so soon as released from duty, he too often suddenly throws off his warm dress, and exposes his surface, bathed in perspiration, to the wind in quest of coolness, and thereby not unfrequently contracts a mortal disease.

How much is this to be regretted! How great is the desideratum that the subject should have careful attention—the attention of men who, by their science and experience, would be competent to do it justice, dealing with it on general principles, and taking into account all the circum-

stances which should have consideration. We had hoped that the dress of the troops would have been fully enquired into by the commission on the sanitary state of the army; but we have been disappointed. Referring to the voluminous Blue Book, consisting of the report, and the evidence on which it is founded, we find that the enquiry in this matter has been scanty in the extreme, and restricted to a very few particulars, such as the shirt, whether it should be of flannel or cotton; the stock, what should be its material; the head covering, which of those at present in use should have the preference.

As we have recommended careful enquiry, and knowing how difficult the subject is in its wide bearings, we shall not presume, nor will our limits permit us, to discuss it in detail. We shall do little more than propose a few queries and offer a few suggestions, and these propounded for troops in the field engaged in actual warfare, for which, his special service, the soldier should always be prepared, keeping in mind, and if possible impressing on his mind, that noble saying of Lord Bacon, "that the offices [the duties] of life are preferable to life"—a saying applicable to dress as well as to other things, whether diet or exercise, conducive in training to make the complete soldier.

1st—Let us speak of the material: Ought it not to be entirely woollen—coat, trowsers, shirt, even to the lining of the former, if they have any lining, as may be proper in a cold climate? and as regards climate, adapting the warmth of the material and the degree of looseness of dress (always to be compatible with the free action of the limbs), as much as possible, to the degree of temperature? And ought not the several articles, of approved good quality, to be provided free of charge by the government? In the United States army we perceive that for a term of five years eight coats are the allowance, one great coat, thirteen trowsers, fifteen flannel shirts, eleven drawers, twenty bootees—these all served out periodically.*

2dly—As to head dress or covering: Ought it not, for the two extremes of climate, to be specially considered, so as to afford as much security as possible from the effects of extreme cold, in a Canadian winter, and of extreme heat and exposure to the sun in a tropical climate? Is not a peak objectionable; ought not the degree of light acting on the retina to be regulated by the eyelids? The Highlander does without a peak to his bonnet—the Asiatic without it to his turban.

* Regulations for the United States Army, p. 134. 1857.

Ought not the hair to afford sufficient protection to the neck? The Spartan troops wore their hair long, and took a pride in it. In the construction of the cap or helmet, it may be worthy of consideration whether there might not be a thin polished metallic external covering with advantage, such a covering having the property of casting off entirely the sun's rays, or if perforated for ventilation, the greater proportion of them, as shown in experiment No. 5, already described.*

3dly—As to the neck: Ought not the stock to be banished altogether, and the part to be protected by the beard in front and the pendent hair behind? Amongst Oriental people the neck has no other protection; and certainly no part needs freedom from restraint more, both on account of the movements constantly required of it, and the important vessels and nerves which, seated in its yielding structure, are liable to suffer or occasion suffering, even death, from pressure. And ought not the moustache as well as the beard be worn? It is a defence to the lips on exposure to the sun, a protection to the nostrils from dust and insects, and as a respirator, may afford some security from malaria and from chilling and scorching blasts.

4thly—As to the loins and abdomen: Should they not have the support of a belt or sash? A world wide experience is in favor of this, and the warmer the climate, generally the more remarkably has the custom of girding the loins been adopted. The first lesson we had on the subject was on a voyage in the Mediterranean long ago, when we had the pleasure of an agreeable companion in a merchant on his way to Egypt. He assured us that in his periodical visits to that country, he, after his first visit, always had recourse to the sash, and chiefly as a defence from bowel complaints. In England, he said he could do without it, but not in Egypt, with impunity. According to our experience, the best support is afforded by a narrow knit elastic worsted sash not exceeding two inches in width, and in length not less than seven yards. Such a support we believe may have more uses than one: it may afford security against lumbago, it may aid in preventing accumulation in the large intestines and undue distention of the gall bladder and urinary bladder, and so conduce to the prevention of constipation, and may even check the formations of calculi,

* In connection with this subject the reader's attention is specially directed to Mr. Julius Jeffrey's work, *The British Army in India*, of which an analysis was given in the article entitled *Our Indian Army*, in the January number of the present year.—Ed.

biliary and urinary. It is very remarkable, the precautions taken in the east to the girding of the loins, and this by the people of the highest and earliest civilization; and we witness the same in the dress of the Roman soldier, and our own Highlanders.

5thly—As to the feet: Might not the sandal in a hot climate and the moccasin in a cold climate (from necessity already adopted by our troops in Canada), be substituted with advantage for the laced shoe or boot? And might not the men with advantage be taught to make and mend them? Those who have had any experience in a protracted campaign, especially out of Europe, know the evil consequences to an army from the failure of boots or shoes; and even when these are not deficient, as at home, how difficult it is to have them provided of serviceable leather, and so to fit as not to occasion foot-sore. The evidence before the sanitary commission is strong on this point; as is also the recent Weedon enquiry. If shoes or boots are to be used, they ought, we are of opinion, to be made, if possible, of the leather of the country, such leather being most suitable to the climate, the leather of a cool or cold climate being close and compact in its grain; of a hot climate, loose and porous; the boots should be so made as to exclude sand and gravel. Till the Turkish troops, with their change of dress from the Asiatic to the European form, adopted boots, corns and the other deformities of feet, the effect of undue and irregular pressure, were unknown to them.

6thly—As regards the skin—the surface of the body generally: Might not oil be applied to it with advantage, as an aid to dress; in wet weather, being conducive to dryness; in cold weather, to warmth; and in hot weather and on exposure to parching winds, checking excessive perspiration and too rapid cooling by evaporation? Many facts might be adduced in proof of the salutary effects of this use of oil. We see how aquatic birds, guided by an unerring instinct, have recourse to it, pruning their feathers with the oil with which nature supplies them, a special gland for the purpose being provided for its secretion; we see, too, how the shepherd, taught by experience its protecting power, lubricates the fleeces of his flock with oil or fatty matter. The birds thus prepared are proof against wet, even when under water; and the flocks can endure the mountain blast, with all the inclemencies of its winter climate, with comparative impunity. In corroboration, we might refer to the great use of oil amongst the ancients, and its use at the present time amongst many tribes of people much exposed to the

weather, such as the North American Indians, who carefully prepare and preserve the marrow of the animals they kill in the chase, for the purpose of anointing their skin before starting on their hunting excursions.

We might support these views by authority, and that without insisting on the statement of Johannes de Temporibus, reported to have lived 300 years, "that he owed his longevity to the use of honey within and oil without." Lord Bacon, in his peculiar language, says, "that anointing with oil contributes to health in the winter, by excluding cold, and in summer by keeping in the spirits, and preventing their dissolution, as also by fencing against the force of the air, which is the most predatory."

We have said that these suggestions are offered for troops in the field; on home service, and on garrison duty, whether at home or abroad, the dress and its materials might be modified. Cotton for under-clothing might be substituted for flannel, being recommended by its greater cheapness and durability. During a time of peace we have compared the health of two regiments on the same station, and that in the Mediterranean, the one wearing flannel shirts, the other cotton, and we found no material difference. It is in an active campaign that the constitution of man is most tried—it is then that his health and life are endangered—and it is then that all possible precautions, hitherto much neglected, ought to be taken to preserve his health and efficiency. It should be kept in mind that every hard, exhausting march is productive of a certain amount of sickness and mortality, every privation of food is productive of the same, and the same from any deficiency of clothing or cover, and with a degree of certainty almost admitting of precise calculation.

On a previous occasion we compared the dietary of our army and navy, so much to the disadvantage of the former. The same result would follow from a comparison of their dress; the one so little judicious, so little in conformity with the requirements of the service and the preservation of the health of the men; the other, so rational and agreeable to the wearer, and so suitable to his duties. We are essentially a naval, not a military people; and apart from the national taste, as displayed in its "efflorescence" in our yacht-loving gentry and the popularity of the naval service, have we not proof of it, in the careful attention given to our navy, and the sound judgment and great ability displayed in the regulating of it, and that for a continuance, contrasted with the little serious attention shown to the army, and that little by fits and starts, on emergencies, and the caprice, rather than

the judgment, by which it has too often been conducted? Our scanty literature of the subject—that of army organization and administration—may be noticed in additional proof; the only work we have to refer to, and that quite recent and limited in its scope, and hardly yet an authority, being Mr. Fonblanque's, of the commissariat department.

Dress, in relation to the treatment of disease, has partaken too much of the common neglect of dress. How little attention has it received? How much more has it deserved? How much, probably, might be effected by means of it, rationally regulated? We know of some of the evils resulting from mistakes on the subject, and of the good produced by the correction of those errors, as in the instance of the exanthemata and of fevers in the removal of a heap of bed clothes from those oppressed by heat.

This was an important correction. Another abuse still exists of a like kind, and hardly less deserving of censure: we allude to the popular error of heating the chest by unduly warm clothing, in persons laboring under pulmonary disease, especially phthisis. How often, with a hot skin and rapid pulse, do we find such patients not merely wearing flannel as an under vest, to which, if light, we would not object, but also in addition wrapped in fleecy hosiery, or covered with hare-skin, or some "comforter," as it is called—the work of kind female hands. Such adjuncts, specially intended to guard the weak organs, cannot but have an injurious effect in keeping up an undue heat, and so accumulating the diseased action. And is not the keeping the chest cool in tuberculosis in harmony with the beneficial effects of mountain air, the reverse of mild or warm, in cases of this disease, now so well established? We have a very limited experience of the beneficial effects of walking in a dress of flannel so as to promote perspiration, in inveterate chronic rheumatism, changing the dress in a warm room for a dry one immediately after the exercise.* Flannel and gout are old associates; and severe burns, as regards their treatment, are coupled in idea with cotton-wool. Judiciously applied, we have proof that they are both useful. They may act probably by regulating the temperature of the part, to the conducting of a healthy circulation in the affected tissues, and through the hygrometrical and radiating powers may even be capable of producing a cooling effect.

In the warding off of disease, how great may be the in-

* See Mr. Chenevin's case, as recorded in an early volume of the *Medico-Chirurgical Transactions*.

fluence of dress! There are facts tending to prove that the body, well wrapped in flannel or clad in any warm clothing, so as to prevent a check of perspiration and chill from the night air, is capable of resisting malaria, that kind productive of ague and remittent fever, and in the most malarious localities—such as the Pontine marshes. We can speak from personal experience of the soothing effect, not merely of discarding a night-cap, but of placing the head wet on the pillow, after ablution, in a hot climate, thereby promoting sleep, without risk of catching cold.* We have heard of a surgeon, now at the head of his profession, and approaching the octogenarian period, remarkable for his health and juvenility of appearance, whose under dress throughout has been silk. How much of his good health he has owed to this peculiarity of dress, who can say? But we must infer that he thinks well of its influence; and, if an electrical atmosphere can conduce to health, the silk, in contact with fabrics of other kinds, may have some virtue.

These are a few desultory remarks on a subject which we could wish to see treated more *in extenso*, believing that it deserves it, and that it would not prove ungrateful for the attention.

On the dress of the people at large, in its minute details, we shall not at present enter; our limited space forbids it, enforced further by the persuasion that in a matter in which fashion is so much concerned, the pages of our Review are not the fit medium for making any salutary impression on the public mind, especially of the women kind: we have enunciated what we believe to be the principles of rational dress, and willingly resign to 'Punch' and the 'Times' the reformatory pen; if we may venture to express a hope, it is, that the one will not spare its jest, nor the other its fulmina-

* As regards temperature, attention to the feet, and in all climates, is hardly less necessary than attention to the head. Fortunately, a foot bath of some kind is easily attainable; if heated and foot sore after a long march or walk, how refreshing is such a bath of tepid or cool water in a hot climate, or during our summer heat; if in a cold climate and after passive exercise, on horseback or in a carriage, how grateful is one of hot water! And it is hardly less so, if not taking any exercise, as when at night time the feet may be cold before retiring to rest, then warmth thus imparted has a calming effect, promotes sleep almost as much as the contrary treatment of the head, as described above, does in a hot climate. The effect of the bath, whether cooling or warming, is not confined to the feet; through the circulation, in the returning blood, the system becomes a partaker of it. How much is it to be desired that we followed the Orientals in the habit of foot washing, a habit so sadly neglected by the English people of the working class. We have been tempted to point to this, though not strictly belonging to the subject before us; and we would add, speaking from some experience, that even the nightly bathing of the feet in hot water has no relaxing, debilitating tendency, but we believe even the contrary, as conducive to their healthy condition.

tion, so long as the power of either of them continues to have effect—that is, so long as the one can raise a smile or excite a laugh, or the other produce a serious thought or a rational conviction.

II. *Trismus Nascentium*. By WILLIAM READ, M. D., formerly Physician to the Boston Lying-in Hospital.

THE appropriateness of the title under which the three following cases are reported, may be questioned by some. Whether they are rightly *trismus nascentium*, or whether the last should not more truly be considered a case of simple idiopathic tetanus, may be a matter worthy of discussion to a certain extent. But in view of the fact that the nomenclature of the disease is almost as varied as the number of cases themselves, and that different authors have adopted different synonyms, that after all the *disease* does not differ in either of the cases, the time at which it made its appearance being the only reason for a change of name, it was thought advisable to bring them together, to class the third, about which there might be some doubt, with the first two, concerning the nomenclature of which there can be no question. By this juxtaposition we at least arrive at one conclusion, that diseases of this kind, tetanic in their nature, lose none of their fatality as they occur at a later period of infancy; at a period of time when the causes which are regarded as the origin of trismus cannot be in operation, and the effect of which must have subsided long before the appearance of the symptoms marking the onset of the attack.

CASE I.—Child of ——— Robinson. Born April 9th, 1847. Symptoms manifested themselves two or three days after the separation of the cord. Refused the breast, moaned constantly. Respiration difficult and jerking. Body became gradually bent back, throwing the chest forward, with tense abdomen, till at the time of death it was much curved. Died before attendance on mother ceased—about four days duration of disease. Head well. Labor not difficult or long protracted.

CASE II.—July 15th, 1856.—Child of ——— Demerrit. Six weeks old. Had been ill some days when first seen.

Much emaciated. Respiration interrupted, jerking. Quiet at times. Before each paroxysm, much pain. Body bent back very much and very strongly—impossible to bend it forward. Died on the fourth day, from gradual wasting. Treated by anodynès.

CASE III.—Oct. 30th, 1857.—Child of ——— Long, aged four months. Labor had been easy and natural. Was weaned at three months. Healthy. Other children in the family had, at this time, the whooping cough. First symptoms noticed were difficulty in respiration, with cough. Parents supposed it to be lung fever, and gave it oil. First saw it November 2d. Found it lying on mother's lap. Head thrown back. Spine stiff and tending to opisthotonos. Lower extremities not affected—arms thrown up. Thumbs clinched in palms of hands. Respiration not much accelerated. No heat of skin. Pulse natural. Bowels entirely well, urinary functions also. Great apparent pain upon the least movement. May have chloroform lotion to spine, chloroform to inhale, and twenty drops of tincture of scutellaria every three hours.

Nov. 3d.—Spasm of muscles nearly gone. Is now lying in a natural position in mother's arms. Eats freely. Continue treatment.

4th.—Worse—all the symptoms have increased in severity. Begins to look haggard in the face, takes less nourishment, moans a good deal, did not sleep much during the night. Impossible to bend the body forward. Thumbs still clinched in hands. Lower extremities not stiffened. Continue treatment, and add calomel, grs. ij; ol. ricini, cochl. parv.

5th.—Medicine operated freely and well. No effect upon symptoms. Is evidently growing worse. Last night got some sleep from inhalation of chloroform. Continue treatment. Dr. Buckingham present.

6th.—Much the same. Bowels, after the operation of medicine, well. Opisthotonos perfectly pronounced.

7th.—Same. Dr. G. H. Lyman and Dr. W. W. Morland present. Child thoroughly examined. Rigidity of muscles over the whole trunk. Abdomen tense. Chest much elevated. Spinal muscles tense and plainly seen. Feet somewhat drawn up on the leg. Free motion in the joints, however. Motion causes pain. Heat of surface natural. Pupils a little dilated. Head almost at right angles to trunk. Mouth open. Keeps one finger in mouth almost constantly; sometimes of one hand and sometimes the other. Thumbs still clinched in palms of hands. Bones of skull perfectly

in place, no depression of occipital bone. Has taken less food. Chloroform did not produce sleep last night, although inhaled five or six times. Begins to look much emaciated in the face. To have ether (sulphuric) for inhalation.

8th.—No better. Ether produced more quiet than chloroform, but not complete repose. During the night, left shoulder drawn back strongly. Feet drawn up at right angles to the leg, and rather stiff. No alteration in rigidity of spine. Coughs more, and with more force. May have R. Nit. acid. dilut., 3xii; aqua—syrup, aa, 3ij. M. A teaspoonful every four hours.

9th.—Much the same, Cough no better. Last night, got the first remission from rigidity she has had, which lasted an hour. During the night, the left shoulder was drawn back. Looks a little better in the face. Continue treatment.

10th.—Dr. Parks present. Child same in general condition. Examined body. Rigidity still strongly marked below the shoulders and spinal muscles. Cough no better. Continue treatment, and add R. Ext. bellad., gr. i; syrup aurant., 3i. M. Half a teaspoonful every two hours. Has not used either the chloroform or ether for inhalation since last visit. Has rested fairly during the night.

11th.—Cough better. Belladonna given regularly. Rigidity less. Countenance more natural. Sits up less erect. Looks much improved

12th.—Bowels somewhat irregular. Stools green. May have the following. R. Syrup rhei arom., 3i; sal. aerat., grs. xx; syrup aurant., 3ss. M. St. cochl. parv. q. q. hora. In other respects better, though cough does not seem to have been affected by the acid, and appears to be as bad as ever.

13th.—Better in all respects. Bowels more natural. Rigidity at times entirely gone. Countenance natural. Cough not quite so frequent.

16th.—Apparently well. Cough gone. Discontinue visits.

Feb. 23, 1858, was again seized with similar symptoms, and died March 1st, 1858.

No post-mortem examinations were had in either case.

Trismus nascentium is a disease most frequently met with in very hot or very cold climates, in the crowded wards of lying-in hospitals, and in other situations where the same conditions of a vitiated atmosphere prevail, but rarely in

private practice. It may appear as an idiopathic disease, and as symptomatic of some lesion of the nervous system. The greatest number of cases recorded as occurring in the same locality, are to be found in the reports of the Dublin lying-in hospital, during the mastership of Dr. Joseph Clark (Transactions of the Royal Irish Academy, vol. iii), where, at the end of the year 1782, "of 17,650 infants born alive in the hospital, 2,944 had died within the first fortnight, or nearly every sixth child, and that mainly of trismus." The cause of this mortality Dr. Clark conceived to be "first, impure air; second, neglect of keeping the infant clean and dry; and, thirdly, irregularity of living on the part of the mothers, especially the abuse of spirituous liquors." "To the first of these causes, however, the result is mainly due, as the second and third operate with equal force in the dwellings of the poor, without the same fatal effect on the children."

Acting upon what from his own observation he considered to be the true theory of the disease, Dr. Clark made such alterations in the ventilation of the hospital as to secure a free circulation of air through the wards, and with complete success: for of 8,033 born subsequently, "only 419 died; that is, about 1 in 19½, or from 5 to 6 in 100." Dr. Collins, in commenting upon the above facts, remarks (Practical Midwifery, American edition, p. 312), "I have but little doubt that by *strict adherence to free ventilation*, in conjunction with *extreme vigilance as to cleanliness*, so as to entirely destroy and prevent an accumulation of foul or heated air in the wards, this frightful disease may be nearly banished from lying-in hospitals. During my seven years' mastership there were only 37 cases of trismus; of these, 14 occurred the *first* year, 7 the *second*, 3 the *third*, 3 the *fourth*, 3 the *fifth*, 3 the *sixth*, and 4 the *seventh* year. The diminution in the number attacked after the second year, is explained by the additional steps taken to free the wards from impure air. When the very great number of children born in the hospital is considered, the proportion of deaths from this disease during the above period is inconsiderable, not amounting to more than *one* in 450 for the entire time; but for the last four years, one in 666—a fact strongly corroborative of the statement as to the benefits to be derived from the means of prevention above described." In this view taken by Drs. Clark and Collins, Dr. James Clarke, Dr. Underwood, Dr. Buer and Dr. Labatt coincide. Others, while still maintaining its idiopathic nature, ascribe it to different

causes. M. Bajon attributes the prevalence of trismus on the coast of Cayenne to the cold sea wind, as it is unknown in the interior; Dr. Evans, to costiveness.

On the other side, and advocating the symptomatic nature of this disease, we find Dr. Bartram, who attributes it to improper swathing and the application of scorched linen to the navel; Romberg (Publications of Sydenham Society, vol. ii, p. 117) and Prof. Colles, who consider that it results from inflammation and ulceration of the umbilical vessels; Dr. J. Marion Sims (American Jour. of Med. Sciences, vol. xi, April 1846, p. 363, et seq.), who attributes it to the pressure of the occipital bone upon the brain, from the habit which prevails to a greater or less extent, of tending children on the back, and thus keeping up a constant pressure in this region; M. Ollivier, Dr. Evory Kennedy, Prof. Doherty, Billaud and M. Maturinski, of Stuttgart, the latter taking the same view of its cause as Prof. Colles.

But little light is thrown upon this disease by studying its pathology. Prof. Churchill, from whose work upon Diseases of Children (Am. ed., p. 94, et seq.) many of the foregoing references were taken, remarks: "It is much easier to determine the predisposing and existing than the proximate causes," and sums up the resumé which he makes of the subject in the following words: "Instead of trying to reconcile these differences of opinion, and to discover one cause for all cases, it appears to me much more philosophical to admit that there are several which may give rise to the same symptoms. Those conditions which I have first communicated may be divided into centric and eccentric causes, and are very intelligible when explained by the discovery of Dr. Marshall Hall. The irritation from these various sources is conveyed by the excitor nerves, and its effects upon the spinal system are reflected by the motor nerves to the organ affected in the disease; but there is nothing which could lead us to suppose that these effects must result from one local cause only. Whatever may be the exciting cause, there can be no doubt that the proximate cause is intense cerebro-spinal irritation, but which leaves no trace of disorganization in the brain or spinal marrow." Dr. Collins (loc. cit. p. 313) says, "From dissection in such cases we have never been able to discover any peculiar morbid appearances which would justify us in offering any explanation of the pathology of this disease." Dr. West (Lect. on Dis. of Children, p. 213) found no essential difference in the examinations he made, between the appearances after death in this disease, and what was noticed in other cases where the chil-

dren died within the same time after birth from ordinary causes. In the two cases mentioned by Billaud (translated by Stewart, p. 489), there was "nothing more than an effusion of a quantity of coagulated blood in the spine. This blood was effused between the two laminæ of the tunica arachnoidea, and filled the whole of the medullary canal, from the medulla oblongata to the sacral region." In view of this he asks, "Were the symptoms of tetanus to be ascribed to this hemorrhage of the spine?" and, in answer, remarks, "I am disposed to think they were." Prof. Colles (Dublin Hosp. Reports, vol. i) records the results of a large number of post-mortem examinations, in which the evidences of ulceration and suppuration of the umbilical vessels were constant, the inflammation extending into the peritoneal cavity, and involving a great portion of it.

Dr. Labatt, at that time master of the Dublin lying-in hospital, published a paper in 1819 (*Ed. Med. and Surg. Journal*, vol. xv), in which he gives memoranda of nine dissections of infants, six of whom died of trismus. The appearances noted by Prof. Colles as characteristic of the navel in that disease, were all absent, while in others, those who did not die of trismus, many of them were present. Dr. J. Marion Sims (*loc. cit.*) found in the case in which he made an examination, the superficial vessels of the brain full of blood, particularly in the posterior portion, while the interior was natural in appearance. A coagulum of blood occupied the whole length of the spine, completely enveloping the medulla spinalis, and thicker as it approached the brain. The spinal vessels were full of black blood. The other organs were healthy, and the umbilicus showed no trace of disease.*

Enough has here been quoted without by any means exhausting the material, to show how little the pathological appearances can be depended on to determine the nature or cause of the disease. The symptoms which characterized the three cases I have noted were not essentially different from what are found described in treatises upon this disease by various authors. It was ushered in by restlessness, whining, some irregularity of the respiration, often of a jerking character, slight spasms of the facial muscles, and later in

* Romberg (*loc. cit.* p. 119), in mentioning the post-mortem appearances of this disease, as stated by various authors, adds: "Without expressing any doubts as to the correctness of these reports, it is necessary, for the due appreciation of the facts, to remind the reader of the considerable amount of congestion existing during the first years of life, both in the osseous and membranous investments of the brain and spinal cord; this will necessarily be increased by convulsive, and more especially by suffocative attacks."

its duration there was strong and well marked opisthotonos and contraction of the flexors of the extremities. The locking of the jaw was not a marked symptom in either of them. In all of them the jerking respiration, restlessness and opisthotonos, with flexure of the hands and feet upon the limbs, were well pronounced. In the second case it would apparently have been impossible to straighten the body without breaking the spine, and during the paroxysm there was evidence of great suffering from pain. Gradual wasting and decline of the vital powers was also noticed in all. Indeed, the fatal result seemed owing to this cause rather than to disease as generally understood. There was no evidence that there was any compression of the thorax in a way to induce asphyxia—a result that often occurs in adults in this disease.

There was but little treatment of an active kind. In the first case, the age of the child forbade it. In the second, the period at which it came under my care rendered it of no use. In the third, whatever was tried was, in the end, of no avail, although for a time it seemed to have checked the disease entirely. The result, however, did not differ from what ordinarily occurs in these cases. The grand conclusion arrived at from a consideration of all the cases I have been able to study, and the concurrent testimony of authors, with perhaps one or two exceptions, that have been consulted, is, that it is of no avail. Dr. Sims, reasoning from a conviction that the source of the evil is in the undue compression of the head during birth, and long-continued pressure of the back part of the brain, arising from the child's being kept constantly on its back, considers the disease to be a "spinal apoplexy." (Loc. cit. p. 366.) His treatment, so far as any is indicated, consists in changing the position and restoring the bones of the head to their proper, normal relation with each other, so far as can be done, supporting the head on a soft pillow, and putting the child on its side. This, however, would not exclude other remedies that might be thought necessary, but seems in his opinion to be most appropriate, and promises the greatest amount of success. Of the eight cases reported by him, six died and two recovered. In both the latter, a replacement of the occipital bone was followed by an amelioration of the symptoms in so short a time that it may be fairly inferred to be the result of the change.

If it was the fact in all, that the origin of this affection, as in Dr. Sims' cases, was to be found in the displacement of the cranial bones, there can be but little doubt that their early readjustment would go far to remedy and cure the

disease. But the records of Dr. Clark prove that, in his cases, it could not have been dependent on a mechanical cause, for the change in the atmospheric conditions of the hospital alone, almost banished trismus from the wards. The cases I have reported can be classed with neither, for in all of them there was no lack of kind and watchful care, combined with every necessary comfort of life and good ventilation, rendering it improbable that the disease was produced by the causes referred to in Dr. Clark's paper; and the length of time which elapsed before it manifested itself in the last two, equally place them out of the category of Dr. Sims' cases.

But while it may be true that the opinion of Dr. Churchill as to the cause of this disease, which has been already quoted, is the only tenable one, there may be instances wherein it may be traced to a direct origin.

When, therefore, symptoms show themselves which indicate the commencement of this intractable malady, if within a few days of birth, the head should be examined with great care, and if any of the bones are displaced, they should be readjusted without delay. If, on the other hand, the infant has gone along in a healthy condition for a greater length of time, to a period beyond the probable action of such causes, the persevering and judicious use of remedies should be at once commenced, with a trusting hope, alas, too often disappointed, in their efficacy, and the final restoration of the little sufferer to health.

ART. III.—*Pure Air and Pure Food—Their Connection and Relationship as an Item in Domestic Economy and Hygiene.*
By E. W. BLAKE, M. D. (Communicated for the Boston Medical and Surgical Journal.)

THAT pure air and pure food are essential to health, no one will deny; but trite though it be, the dogma will bear repetition. Theoretically right on the importance of ventilation, is not our community still practically at fault in failing to bring to bear all the means and appliances for securing it? And after all there has been written on the "chemistry of food," and its practical application to cookery, has there been that advancement in this branch of "art" which the real interests of mankind require? Change is not always reform, nor is progress necessarily improvement. We would

not indeed go back to the wide-mouthed chimney, down whose ample flues the stars gazed smilingly on the broad hearth, high piled with its load of blazing wood, whose sweeping draught of air sucked in so largely of the pure breath of heaven; but why, in our furnace-heated homes, need we, as is too often done, shut up the chimney's narrow throat, close every vent, and make the rooms air-tight? Pure air a blessing! And you believe it? Take down, then, those double windows, or remove those sand bags from over the narrow chink between the sashes; unlist those doors, and let Æolus and Boreas blow in with welcome.

Fuel saving is a christian virtue in the household creed, and where our mothers baked in huge brick ovens, nor spared the wood; or before the glowing embers in tin kitchens did their roasting, we, wiser grown, discard the latter process, and bake our meats shut up in iron walls, and burn out their juices with the red hot anthracite.* A range oven and the one of olden time—how wide the difference! Has progress been improvement here?—hygienically, we mean, of course.

We are here reminded of, and must refer to an editorial in a late number of the Journal, respecting "sanitary conventions." With the sentiments therein expressed we heartily sympathize, trusting that the "sanitary code for cities" may here and elsewhere become the subject of municipal enactments. Its provisions are admirable, as you say, and "we may well rejoice that the spirit is at least born into our republican atmosphere, which has long lived, flourished and meted out justice among the people of older countries." Why should the freedom of our land give immunity in the matters of house drainage and public markets from police surveillance, if upon them depends in any degree the purity of the air we breathe, and of the food we eat? And this brings us back à nos moutons. With pure air in our dwellings, and pure food filling our larders, have we yet secured the best means of preserving it? Is not the former an important element to this end? We shall presently see. It is not the adulterater's art only we have to fear, for there are other sources of sophistication than those which human agencies adopt. Our climate, though we boast of its salubrity, tends during the heat of many weeks (and on that season we have just entered) to induce, by its hygrometric

* The latest patented "double oven beauty cooking range," is advertised to "do the continuous cooking for the entire day with one hod of coal." True, it is not stated how large the hod must be.

condition and elevated temperature, speedy decomposition. Decay, the universal law, comes into play, as the life principle ceases. It seizes all our esculents alike, differing only in degree and form. Fish, flesh and fowl soon "smell to heaven." Vegetables wither and decay; fermentation and mould attack our fruits; and last, but by no means least in importance, milk, "that model of what an alimentary substance ought to be," upon which so much depends—whether as an ingredient in the many luxuries of adult years, or of infancy, the very *pabulum vitæ*—is subject to "changing," which carries disappointment into the dining room and dismay into the nursery. A condition of *agalacty* is at times a sore trial in the latter department, and any means of keeping this "prototype of nutritious matters in general," intact and pure, should be eagerly sought after. So many infants at the present day fail to derive a supply from the maternal source, that its preservation is hygienically important.

Our fathers sought *refrigeration* in the dark cellar and in the cool, deep well. Ice, though indigenous with us, has not been *cultivated* till these latter days, but has now become a universal luxury, and necessity as well. Refrigeration by its instrumentality is the great preserver, but, as now employed, does it not fail to secure, as regards length of time and contamination, the end in view, beyond the limit required by science and philosophy.

That modern device, the refrigerator, is now a household institution in our land. Without condemning it in toto, we would question the *salubrity* of the air-tight provision chamber common to most of them; we say air-tight, for this seems to be a point made prominent in commendation of some of them, or at least their ice-preserving qualities are urged. Ice-saving is another cardinal virtue in the domestic creed. But may it not be an unwise economy? To make cool and keep it so, and shut up the body of air within it, is the aim; but beyond a certain point, or time, cold, damp air (as this must be), thus confined, fails to preserve. An article of food of the temperature it would be in summer, deposited within, receives the moisture by precipitation on its surface, and this promotes decomposition.*

On the other hand, and here comes *our point*, a gentle and uniform current of dry and cool air passing through the provision chamber will insure the prevention and even arrest of

* Such an arrangement may answer when it is intended to keep food and luxuries from meal to meal only, but beyond this they fail, as your own experience must have taught you.

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decomposition. *Ventilation*, then, should be the end sought in constructing a refrigerator, and this by no means involves a waste of ice. What though it may beget an increased consumption of this abundant article—its compensation for this will come in the shape of increased purity and flavor of food and fruits, and their consequent greater healthfulness. It is allowed by close observers, that provisions are rendered unwholesome by being kept in a receptacle in which the air is not constantly and effectually changed, and the health of individuals has no doubt suffered in consequence. Most refrigerators, though under the supervision of careful housewives, *do* acquire a musty and offensive smell, a pretty sure indication of their pernicious tendency. That these are facts, and appreciated as such, is manifest from the further fact that trials have been made to improve in their construction, by introducing the appearance, certainly, of an attempt at ventilation; some plausible, perhaps, and others sufficiently amusing.

In one, a perfect change of air involves too warm a temperature, and so an extravagant waste of ice.

Another, which has met with some success, in contradiction of natural laws, is based on the idea that cold air, introduced at the bottom of a chamber, will rise and pass off at the top, without rarefaction. An equilibrium is soon established in this machine, and ventilation ceases.

Another, with a hole in the top and no inlet for fresh air, depends on warm food to start the current, &c.

Still another, air-tight, has a scheme, by a peculiar arrangement of the ice, for keeping up a revolving current; not of fresh air, but of that already impregnated with the exhalations from the multifarious articles deposited within its food chamber. But the revolution of foul air ceases as soon as the temperature of the whole interior becomes uniform.

How, then, is ventilation to be obtained? how produced, a circulation entirely automatic, which shall secure a uniform temperature, with a constant and regulated supply of cold air, with escape of the air which has become impure by contact with the provisions? Simply by the application of well known natural laws.

There has recently been brought before the public a refrigerator which combines all the qualities to be desired, constructed on sound principles of philosophy, and practically as well as theoretically right. A diagram of it would exhibit a fine illustration of scientific ventilation, and as such it has been introduced by Prof. Silliman, jr., into his new work on

natural philosophy.* The air within the ice chamber, which is situated above that for provisions, becomes chilled, and its gravity consequently increased, by contact with the ice, and descends into the provision chamber. This is followed by fresh air from without (by means of a register properly arranged in the front wall of the ice apartment), which enters, is chilled and falls from the same cause. The weight of a column of chilled air within the refrigerator is consequently greater than that of a column of air of equal height outside the refrigerator. The communication with the outside air is affected in such a manner that the weight of the column of air between the provision chamber and the registers of escape (placed in the sides) is slightly less than that of the column in the chamber, and hence there is a constant pressure within, which causes the air which has been in contact with the provisions, to escape gradually and continuously.

Thus much for the ventilation—and now as regards the *quality* of the air. The current of air once secured, and we have that other important preservative element, dryness. Warm air saturated with moisture, as it is in summer, on coming in contact with ice will deposit its moisture and become dry. Such air passing over moist meats or fruits will dry and thus preserve them, for in the absence of humidity, the changes which decay requires, go forward slowly.

At 80°, the air has a capacity equal to over ten grains of water in each cubic foot; at 40°, this capacity is reduced to three grains, and at 45° it is only one-third what it is at 80°.† According to Silliman, the temperature of the food chamber in this refrigerator averaging 44° to 45°, it will be seen that it affords a “climate” in which all articles of provision will keep sweet in the warmest weather, and for an unusual period; for, as has been shown, we have *uniformity* in the cold, dry current, and this is important to prevent decay. Variations of temperature expand and contract the tissues and finally rupture them, and mingle together juices which tend to fermentation and decomposition.

* Silliman's *First Principles of Philosophy*, 1859, p. 428. After describing the *modus operandi* of this refrigerator, he says of it as follows: In this way a gentle current of about 45° F. is steadily maintained as long as the ice lasts, and being dry, articles of food are preserved sweet and free from mould a long time.

† The refrigerator alluded to, whose good qualities we so highly commend, having tested it in our own household, is Winship's (the name is suggestive of ventilation) patent upright self-ventilating refrigerator.

CHRONICLE OF MEDICAL SCIENCE.

MATERIA MEDICA AND PHARMACY.

1. *On the Employment of Iodide of Sodium.* By ALEXANDER URE, Esq., F. R. C. S., Surgeon to St. Mary's Hospital, and Lecturer on Clinical Surgery.

I submit to the profession the following observations respecting medicines, which will, I trust, be found useful in practice.

Iodide of sodium is met with in the ashes of sea-weed and of various plants which grow on the sea-shore. To this source may be reasonably ascribed the belief entertained in the healing virtues of sea-weed by inhabitants of the coast in different parts of the globe. Professor Laycock, in an ingenious address which he delivered at the pharmaceutical meeting in Edinburgh last November, and which is published in the *Pharmaceutical Journal* of the month following, states, that "in the pampas of South America, where goitre is prevalent, the remedy, a so-called goitre-stick, is nothing more than the thick stem of a sea-weed." Mr. Cooper, in his *Surgical Dictionary*, recommends for some scrofulous affections the use of poultices of sea-weed.

Iodide of sodium, as a therapeutic agent, is and ought to be more active than iodide of potassium, since it is richer in iodine. According to Gmelin, iodide of sodium contains 84.45 parts of iodine in the hundred, while iodide of potassium contains but 74.27, the proportion of sodium, though small, being still sufficient to cover the irritative quality of its associate.

As far as my experience goes, iodide of sodium is a blander salt, more assimilable, and better borne by the stomach, than iodide of potassium. It is, moreover, much less prone to produce symptoms of iodic disturbance. Patients under my care have taken it steadily for weeks together, without suffering the slightest inconvenience, and with uniform advantage as regarded the morbid condition. On no occasion, save one, has there been any complaint made of this medi-

cine producing sense of weight or uneasiness referred to the stomach, nausea, impaired appetite and digestion, headache, running from the eyes and nostrils, general nervous depression—symptoms which at times supervene during the administration of iodide of potassium, even in moderate doses. The instance in question was that of a puny, scrofulous boy with disease in both knee-joints.

As a general rule, the preparations of soda are milder in their operation on the system than those of potash. If, moreover, the important view, first announced by M. Dumas in the 92nd volume of the *Annales de Chimie*, be accepted, that there are certain salts which leave the blood the faculty of becoming arterialized, while others deprive it of this property, and that the salts having soda for their base, are more proper to maintain this condition of integrity than those of potash or ammonia, it may be fairly assumed that the former are likely to exercise a more favorable remedial influence than the latter, especially if exhibited continuously for a length of time. Soda, variously combined, is diffused extensively throughout the organism; fully five-sixths of the saline constituents of healthy blood consists of salts of this base.

Iodide of sodium may be prescribed in all cases in which the employment of iodide of potassium is indicated, as antidotal to various constitutional symptoms of syphilis, chiefly of the so-called tertiary group, and where mercury has been properly used beforehand; in certain forms of rheumatism; in chronic affections of the joints and bones of a scrofulous character, particularly where a stealthy inflammatory process has determined copious fibro-plastic deposition or hypertrophy. If judiciously administered, it may be given in progressively increasing doses, where it is desirable to produce a decided alterative effect on the system. M. Gamberini has furnished a brief notice respecting its use in the volume of Schmidt's *Jahrbücher* for 1858. Reference is made to 116 cases of constitutional syphilis in which it had been exhibited, and where it was found to have acted more rapidly than iodide of potassium, and often proved efficacious where the latter drug had been of little or no avail. It is there recommended to be given as follows: One scruple is to be dissolved in three ounces of distilled water, and this is to be swallowed in divided doses in the course of the day. After the lapse of two or three days, the above amount is to be augmented by the addition of six grains; and so on until eventually the patient comes to take two drachms, or even more, of the salt daily.—*Lancet*.

2. *Action of Santonin upon Vision.* From the French, by
CH. F. J. LEHLBACH, M. D.

In the Academie des Sciences (Gaz. Hebdom. April 1st) of March 21st, 1859, M. T. L. Phipson related his experience with santonin. He had taken a five grain dose of santonin a little after two o'clock in the afternoon. Between five and six o'clock its effects became manifest; he thought he perceived a very faint greenish tint upon white window curtains, but ascribed it at first to his imagination. At six o'clock the gas flame, chandeliers, the fire in the stove, and all white objects, strongly illuminated, assumed a very intense yellowish green tinge; other objects retained their ordinary colors. This effect continued, without intermission, during the whole evening, and did not commence to diminish until half past ten o'clock, and was still appreciable at midnight and until two o'clock in the morning, when the doctor went to bed. In the morning the effect had disappeared entirely.

Attempts have been made to explain this remarkable affection of sight, by supposing the production of a temporary icterus, during which the serum of the blood becomes colored green. M. Phipson adds:

"I have been led to think that the serum of the blood is really colored by the assimilation of the santonin. I have shown that santonin is transformed, under the influence of oxydizing agents, into a new, yellowish green, brilliant and crystalline substance, which I call 'santonein,' and this substance is found in the urine of persons who have taken santonin. After the facts which I have observed, it seems to me evident that the santonin is oxydized in the body by the oxygen of respiration, and is transformed into 'santonein.'"

3. *On Quinine.* By Dr. BOOTH of Miss.

It will not (says Dr. Booth) be amiss to recapitulate, in a condensed form, what we deem the peculiar action, the practical qualities of the great southern remedy—quinine.

1. It is a nervous tonic, imparting tone especially if not exclusively to the nerves that control the circulation.

2. Being a tonic of this sort, it is necessarily anti-congestive, preventing and relieving congestion by the same *modus operandi*.

3. It is eminently anti-periodic; but it is anti-periodic because it is tonic and anti-congestive.

4. Its action is quick, decided and evanescent. If it does good, it will do it quickly.

5. It sometimes slightly irritates the gastro-enteric membrane.

MEDICAL PATHOLOGY AND THERAPEUTICS.

1. *Treatment of Epilepsy.* By J. B. THOMSON, L. R. C. S., Edin., Resident Surgeon, General Prison, Perth. (Edinburgh Med. Journal.)

It is seldom that a practitioner has so many as six cases of epilepsy at one time under his charge; and this occurring to me (in consultation with Dr. Malcom), it seemed a very good opportunity of putting all upon the same plan of treatment, with a view of testing the value of certain remedies in vogue for this intractable malady. The positive and negative results of this treatment are given; and, I am sorry to say, confirm the dictum of a great master of the healing art, that epilepsy is truly the opprobrium medicinæ.

I may state that no cases could have had a more fair or favorable trial than those now reported. The patients were wholly under surveillance as to diet and regimen. The medicines were regularly administered by the hand of an official, and the effects carefully noted day and night, while the medicines were in use.

CASE I.—A. B., æt. 27. Has led an irregular life, and alleges the cause of his epileptic fits to have been a beating which he got in a brawl. The singular conformation, or rather malformation of his head would lead me to believe that at least the tendency to epilepsy was congenital. Admits that he has been subject to fits for twelve years, but cannot say how much longer.

As in almost every case of epilepsy, this man has some mental peculiarities. He is passionate, sullen and stubborn in temper, with an intellect verging on fatuity.

The seizures come on without any premonition.

“*Subito, ut fulminis ictu, concidit.*”

This case in its history presents several curious examples of intermission, which were traceable to physical and psychological causes. He had an attack of bronchitis, which continued for six weeks. During all this period he had not a single fit; this absence of fits being no doubt due to the influence of the bronchitis.

Shakespeare knew this pathological fact, and makes Ben-
volio express it well :

“One pain is lessen'd by another's anguish;
One desperate grief cures with another's languish;
Take thou some new infection in the eye,
And the rank poison of the old will die.”

Also, for eighteen days after he began the treatment reported as under, he had no fit; being, as I believe, under the cheering stimulus of the hope that the remedy would succeed in curing his malady.

July 23, 1858.—I placed A. B. under treatment for six weeks by the following doses of cuprum ammoniatum, E. D., or cupri ammonio-sulphas, L: \mathcal{R} Cupri ammon. sulph. \mathfrak{z} ij; micæ pannis, \mathfrak{z} vj; sol. carb. ammon, q. s. M. Divide into 240 pills. One to be taken twice a day.

The following will show the number of fits during the taking of these pills, and the comparative number six weeks before and six weeks after the medicine was given up :

	By Day.	By Night.
No. of fits six weeks before putting on treatment, - - - - -	6	1
No. of fits while under treatment, - - - - -	4	5
No. of fits six weeks after treatment, - - - - -	3	5

It thus appears that while under this medicine there was no benefit, but two fits more occurred daily while under treatment than the six weeks before, and one fit more six weeks after than six weeks before the use of the pills of cupri ammon.

I gave the copper pills a second trial, at the patient's request, for another month, with no better effect.

Oct. 1, 1858.—The valerianus atropinus, in doses of 1-60th part of a grain, having attained some reputation in Amsterdam, I resolved to give it a trial. Pills containing 1-60th part of a grain were administered for a month, twice daily, with an increase of the number and severity of the fits, viz: six fits by day and two fits by night.

The summation of this case is as follows:

During six months, under no treatment, 29 fits.

During four months, under the above treatment, 28 fits.

CASE II.—J. D., æt. 41, says he has been subject to fits since 1851; and he attributed them to a beating on the head which he got in a quarrel. He has, however, like case I, a curiously shaped head, especially heavy in the occipital region, from which I incline to think that the cause must be congenital in its nature. He is ignorant, facile, and ready to give way to drinking and bad company; but, if kept from these, might become a good member of society.

June 10, 1858.—I put this man upon the pills of the *cuprum ammoniatum*, as afore stated, but as the fits were aggravated either *post hoc* or *propter hoc*, the medicine was only continued fourteen days.

	By Day.	By Night.
No. of fits six weeks before, while under no treatment, - - - - -	9	22
No. of fits during fourteen days under treatment, - - - - -	5	19
No. of fits during ten days after treatment, - - - - -	2	23

This man ceased to be under my care after the 16th August last, and I have not heard of him since that time.

CASE III.—J. W., æt. 38. This man was a laborer, and in 1853 fell from a scaffolding, and suffered fracture of the skull in the frontal region, from which he says he lost two ounces of brain. He is weak minded, and liable to violent paroxysms of temporary insanity.

He was treated for six weeks with the pills of copper, with the following results:

	By Day.	By Night.
No. of fits six weeks before treatment, - - - - -	1	1
No. of fits during six weeks treatment, - - - - -	3	8

During thirty-one days he was put upon the *valerianus atropinus*, to the extent of 1-60th part of a grain, twice daily, and he had no fits while using this medicine; but he had several violent paroxysms of insanity, which seemed to me to arise from the treatment, and the atropine was given up.

During six weeks, after all treatment was given up, the fits returned, by day three, and by night six.

CASE IV.—W. McG., æt. 40. For two years has had fits of epilepsy, which followed upon and were always attributed to intemperance. Came under my care on 14th July 1858, and has had no fits since that time. Nevertheless, I put him upon the *pil. cupri ammoniat.*, with decided benefit to his general health.

CASE V.—J. McK., æt. 25. Came under my notice on 12th May 1858. Has since then had two fits—one in June and one in July.

Since being put upon treatment, on 23d July 1858, with the pil. cupri ammoniat. has had no recurrence of the fits.

CASE VI.—M. McG., æt. 35. This case seems complicated with hysteria and weak mindedness. In this patient, the fits were much increased in number and severity during the treatment as well as afterwards.

The valerian atropinus was followed by no beneficial effects, and the fits still increased beyond what occurred when no treatment was followed.

The following abstract shows at a glance the treatment and results of these six cases of epilepsy :

Cases.	Treatment.	Results.	Remarks.
I.	Cupri ammoniat.	Fits increased.	The fits increased so much that the medicine was obliged to be given up. The treatment in this case seemed to be injurious.
II.	Valerian atropin. Cupri ammoniat.	Ditto. Fits increased.	
III.	Cupri ammoniat. Valerian atropin.	Fits increased. No fits, but paroxysms of insanity induced.	
IV.	Cupri ammoniat.	General health improved.	This woman had one fit in January, one in June, and one in July; has had none since 23d July 1858, when she was put on treatment up to this date, March 1859.
V.	Cupri ammoniat.	No fits, and health improved.	
VI.	Cupri ammoniat. Valerian atropin.	Fits increased. Ditto.	

The conclusion to which all practitioners whom I have known are brought in regard to epilepsy is, that we must rely chiefly if not wholly on diet, regimen, and the general principles which regulate the health of body and mind. As to medical means, Esquirol declares, after all his large experience, "*Je n'ai pu obtenir de guérison.*" I cannot help being convinced that the treatment of the foregoing six cases was something worse than useless.

2. Effects of Poisons during Hunger and Repletion.

Dr. Köhler, in an interesting and very able paper, gives some curious evidence on the above subject. The animals subjected by him to experiment were rabbits, dogs and pigeons; the poisons employed were strychnine, hydrocyanic acid, emulsion of almonds, and ether; and the absorbing surfaces where the poisons were applied or injected were the alimentary canal, the peritoneal cavity, the respiratory surface, and the cellular tissue. The experiments themselves are arranged in five groups, in each of which is noted the color and sex of the animal, the duration of the inanition, the weight of the body, the quantity of poison used, the commencement of the action of the poison, the time of death, and the difference in the period of action in fed and unfed animals. It has been held by all modern writers, that by hunger the energy and activity of all the organs are reduced; but it has also been maintained that hunger favors strongly the absorption of poisons. In the paper before us, Dr. Köhler, admitting and demonstrating the former of these opinions, disputes the latter, and adduces his experiments in proof that hunger prolongs the absorption and the reaction of poisonous substances. In offering a reason in the way of explanation of this statement, Dr. Köhler argues that during abstinence from food, the absorption of oxygen decreases till death, and the proportion of carbonic acid evolved is correspondingly diminished. The blood cannot, therefore, circulate with its accustomed rapidity during hunger, hence poisonous substances are incorporated and borne along with the blood with corresponding slowness, and exert their influences on the nervous system with proportionate tardiness. Starvation itself, to a certain extent, does not, according to this author, cause any diminution in the quantity of blood. The quantity is made up by the fluids from the tissues, and the blood becomes thinner and altered in quality, but not less in quantity. The same rule obtains after a small venesection. If, however, a large venesection is made, or if inanition is allowed to proceed to a considerable period, then is there a true decrease in the quantity of blood and a contraction of vessel. In the experiments referred to, where the starvation was never made to extend beyond sixty-six hours, the above consideration does not enter.

Regarding the parts of the body into which the poison was thrown, as contrasted in cases of animals well fed and animals starved, no difference seems to have occurred; the larger the surface, the quicker the absorption.

3. *On the Treatment of Hooping-Cough.*

Notwithstanding the notion extensively prevalent, that hooping-cough is uncontrollable by remedies, or that it can only be benefitted by change of climate, there is no reason to doubt, that if brought early under treatment, the symptoms may not only be moderated, and other contingent diseases warded off, but its duration may be materially shortened. Enough has been said on the subject to substantiate this assertion. Thirty-five cases brought under treatment, after an average duration of more than three months, were all cured in less than twenty-five days in the aggregate, and would doubtless have experienced the same beneficial result in about the same length of time, had they been brought six or eight weeks earlier. This assertion is further borne out by this fact, that of eighty-seven cases brought for treatment within fourteen days of their commencement, the time occupied by the treatment was still the same as that of the general average, but the whole duration of the complaint was only thirty-seven days, that of the whole number, excluding the neglected cases, being forty-two days, and the term of the decidedly neglected cases, 111 days. Further, of the eighty-seven cases above named, thirty-two had an average of eleven days, in which the whole term of the complaint was thirty-five days; and of fifty-five cases, with an average existence of five days on admission, the whole term was reduced to thirty-two days.

The remedies employed were in the simple cases, or when the complicated cases had been reduced by other treatment to this condition, Dover's powder alone, or combined with camphor, camphor inhalations, emetics, belladonna, and local irritants, but always with either opium (Dover's powder) or belladonna as a principal remedy. Sometimes the Dover's powder was replaced by tincture of opium, given in camphor or aromatic water.

Opium was commonly given in form of Dover's powder, in doses of one grain, or one or two drops of the tincture in aromatic water, twice or thrice daily. The Dover's powder was frequently combined with an equal quantity of camphor, and sometimes with half or quarter of a grain of calomel, twice or three times daily, for a child twelve months old. This mode of treatment had an excellent effect in many cases. An equally successful result was often obtained by an emetic (five grains or more of ipecac. pulv.) given in the morning, and two grains of Dover's powder,

with or without camphor, at bed time; no other medicines in the interim. By these measures fifty-eight cases were treated and cured on an average of twenty-eight days.

Belladonna was used in seventy-six cases. It was given in the form of the powder of the leaves, never the extract, as this is an uncertain preparation—and sometimes in form of solution of the nitrate of atropia. When in the form of powder, half a grain, mixed with five grains of sugar, was given to a child twelve months old twice a day; then, after two days, if well tolerated, three times; then four times a day, or oftener, and in larger doses; being gradually increased, until a specific effect was produced. The solution of nitrate of atropia was so prepared as to contain one-ninety-sixth of a grain in a teaspoonful of the liquid; this dose is equal to about half a grain of the powdered leaf, so that a teaspoonful of it may be given twice or thrice daily to a child one year old.—*Dr. Whitehead's Report of Clinical Hospital for Diseases of Children.*

4. *M. Trousseau's Treatment of Rheumatism.*

In the Salle St. Agnes, under the care of the same physician (Trousseau), is a young man, aged twenty, who is just recovering from acute rheumatism, belladonna, one of M. Trousseau's favorite remedies in this affection, having been, to the exclusion of every thing else, the only medicine employed. The rheumatism was of the articular kind, affecting chiefly the large joints. The fever ran high, the heart's action was violent, and the "bruit de soufflet" very distinct, accompanied with pain on pressure over the cardiac region. Belladonna was administered in the following proportions: One grain of the extract was given on the first day; two grains on the second; two and a half on the third; three on the fourth; and so on progressively, up to six grains per diem. On the fourth day the constitutional effects of the medicine became apparent, as was evinced by spectral illusions, delirium, dilatation of the pupils, foul tongue and parched mouth. Consentaneous with these symptoms, an amelioration in the rheumatic pains was observed. Notwithstanding this improvement, the belladonna has been continued; and although the patient is all but free from pain, M. Trousseau deems it prudent to prolong the treatment, with a view to the prevention of a relapse. In certain cases, Trousseau, and other hospital physicians here, are in the habit of commencing with the maximum dose noted

above; and we have known it prescribed to the extent of eight grains of the powder or extract on the first day of the treatment.

The rule is, that each day the dose be increased until delirium sets in; at this point the same dose is continued for a few days, then gradually diminished; it is, however, essential that the bowels be kept open by the administration of some purgative, such as calomel and jalap every day. From what we have observed, there seems to exist a kind of antagonism between belladonna and rheumatism; and the same has also been observed in reference to this same affection and the constitutional effects of quinine. Without seeking for an explanation of this peculiar antagonism, we must, in the mean time, at least, content ourselves with the simple observance of the fact, as the very individuals who are in the habit of employing these remedies do not pretend to enlighten us as to their *modus operandi*. Trousseau himself is of the opinion that, in the case of belladonna, its curative influence in rheumatism is attributable to its action on the circulatory system; this action, however, being but secondary to the effect it produces on the nervous system. At one time he is to be found treating all cases of rheumatism, apparently without distinction, with quinine, while at another belladonna is his specific, to the entire exclusion of every thing else. This apparent inconsistency disappears when one really knows and can appreciate his motives. Close and philosophic observation has enabled him to recognize something special and peculiar in its character and form, during certain seasons, which is not to be found in it at others; and hence the treatment, which may be suitable in one series of cases, he finds does not answer in another. What this peculiar modifying influence may be he does not of course know.—*Cincinnati Lancet and Observer*.

5. *On Laryngoscopy.* By Professor CZERMAK.

Under the head of a contribution to laryngoscopy, Prof. Czermak relates a case of chronic loss of voice, of supposed nervous origin, chiefly because it was often suddenly aggravated by emotional causes; in which, by means of a small laryngeal mirror and an ordinary study lamp, he was enabled distinctly to make out a small dark colored tumor, of the size of a small green pea, resting, by a tolerably broad base, on the right true vocal chord. The growth had a somewhat uneven surface, and seemed of soft consistence, inasmuch as

each vibration of the chord caused its whole substance to tremble, and when closed on by the glottis, it seemed somewhat elastic; the sudden exacerbations of hoarseness, from emotional causes, depended, no doubt, on the more or less erectile character of the growth. C. only saw the patient once in passing, but suggests the propriety of operative interference in such cases, and relates this case chiefly as an encouragement to others to prosecute this method of diagnosis by means of Garcia's laryngeal speculum, recalling, however, the fact that this method of diagnosis dates long previous to Garcia, and referring for proof thereof to Liston's *Practical Surgery*, London, 1840, p. 417.—*Wiener Wochenschrift*.

6. Medical Excerpts.

Acetous tincture of cimicifuga.—Dr. Kœhler of Pennsylvania proposes the employment of dilute acetic acid and alcohol as a solvent for the active matter of this valuable indigenous drug, as follows:

Take of black cohosh root, bruised, five ounces; dilute acetic acid, U. S., one fluid ounce; alcohol, eight fluid ounces; water, eleven fluid ounces. Mix, macerate fourteen days; express and filter. Dose, one to two teaspoonfuls.

He says: "After due trial I found this combination to answer better than any other form, and the neighboring physicians, to whom I gave the formula, express themselves as highly pleased with the acetated tincture of cimicifuga. It has been successfully employed in nervous affections, and as an alterative in various forms of rheumatism and uterine affections.—*Cincinnati Lancet and Observer*.

Atropia in epilepsy.—Dr. Max Maresch (*Wienerzeitschrift*), physician to the Vienna hospital for the insane, prescribed the atropia in eighteen cases of epilepsy; three were completely cured, and thirteen much improved.

The one-fiftieth of a grain was given every morning before breakfast, for a period of from sixty to ninety days—an intermission of thirty to forty-five days allowed to the patient, and then the medicine again prescribed. It is important that the patient use neither coffee nor cocoa, as the active principles of these counteract the physiological effects of the atropia.

In the above dose, the usual symptoms of belladonna were produced.—*Med. & Surg. Reporter*.

Bismuth snuff in coryza.—M. Monneret, we are told by the *Revue de Thérap.*, has established the services of the subnitrate of bismuth in acute coryza, and Dr. Sobrier has lately shown that by the addition of iodide of sulphur to it, a cure for chronic coryza is obtained. The following is his formula: Subnitrate of bismuth, four parts; licorice powder, eight parts; iodide of sulphur, thirty parts. Of this compound the patient is to take ten or twelve pinches in the day according to their effect.—*Medical Times and Gaz.*

Cholera.—Bouchut (*Gaz. des Hôp.*) has found in obstinate cases of this affection arsenic and strychnia at times very efficacious. One case was cured by the former after the latter had failed, and vice versa.

Obstinate vomiting.—Dr. H. Buss of Shoreditch, in the report of a case, incidentally remarks:

I put in practice Dr. Steggol's plan of arresting obstinate vomiting; ten-grain doses of sulph. of magnesia in half an ounce of water every half hour—a dernier resort which has never yet failed me.

Tannin in Bright's disease.—In the *Arch. Cen.*, Jan. 1859, Garnier gives the history of three cases of Bright's disease that were under his own care, and six cases garnered from the journals, in which tannic acid was freely used.

His conclusions are:

1. Tannin in doses of from 2 to 4 grammes daily is able to cure Bright's disease.
2. Its curative action is shown in a diminution of the albuminurea, improved cutaneous transpiration, regularity of the bowels and increased appetite.
3. These effects are perceptible on the 2d day of treatment.
4. Does not impair digestion.
5. These effects are the result of the action of the acid in favoring the coagulability of the blood, and in exerting a tonic and astringent power upon the blood corpuscles.

Treatment of erysipelas of the limbs by elevation.—A plan of treatment practiced at the Middlesex hospital, England, for erysipelas of the limbs, is merely the practical application of a general principle which is too often neglected.

It consists in elevating the affected leg or arm in a vertical position above the horizontal plane of the body. This causes a subsidence of the swelling, and removes the pain; the circulation in the veins is accelerated towards the heart, and the hitherto inflamed and red skin assumes a pallid aspect.

Lancet.

Typhoid fever.—M. Bellentani uses the following mixture internally in typhoid fever: Gum water, oz. jss; lemon syrup, oz. j; chlorate of potassa, grs. xxxij.

Every day, says the author, I increase the dose fifteen grains. I have never exceeded ninety-five grains in 24 hours.

Drinks acidulated syrups, more frequently abundance of fresh water; daily injection of pure water; applications to the abdomen of compresses wet with the following solution: Water, sc. ij; chlorate potassa, oz. j; hydrochloric acid, drms. ijss.

The potion is given daily until symptoms amend, when medication is suspended, and the cure left to nature and nourishing diet.

SURGICAL PATHOLOGY AND OPERATIONS.

1. *Traumatic Tetanus successfully treated by Atropia.*

The editors of the Kentucky Semi-Monthly Medical News have published the successful treatment of a formidable case of tetanus by free use of atropia. The patient was a lad æt. 14. The cause, a lacerated pistol wound of left hand, received 27th of December last. On the evening of January 12th convulsions occurred; the spasms for a time were allayed by the application of chloroform, but fearing its toxic effects upon the blood, repeated and greatly prolonged anæsthesia was regarded as altogether too hazardous. On the 15th of January, at 10 A. M., he took 1-20 gr. of atropine; similar doses were repeated every three hours, which kept him fully under the influence of the medicine, with the effect of gradually abating the force and frequency of the spasms. On the 15th the atropine was reduced to 1-40 grain every three hours. Spasms and delirium, more or less severe, continued until the 20th, when these manifestations were so slight the atropine was discontinued. The trismus and muscular rigidity subsided very slowly. During the progress of the case, other means were employed to meet temporary symptoms; which will be readily suggested to the mind of any intelligent physician who may chance to have a case of this fearful nature under his charge.

The following remarks are so judicious, we cannot resist the inclination to present them to the readers of this journal:

"Chloroform, without doubt, is the most efficient agent for the control of the spasms, but unfortunately its toxic effects upon the blood unfit it for cases where long persistency of influence is required. And all authors who have observed and written much in regard to tetanus, teach us to place our principal reliance for success in the safe conduct of our patient through the first four or five days, after which the disease is spoken of as 'chronic,' and manifesting a tendency towards spontaneous subsidence. Our measures of treatment were from the first directed towards the attainment of this end. One of the most strongly urged points of treatment in this case, and, as we conceive one of the most important, was, that our patient should be kept absolutely free from all needless sources of excitation. Strange faces were prohibited from his room—noises were interdicted—his nurses were admonished to be gentle, calm and quiet in their attentions; sudden currents of cold air, and all unnecessary contacts with his bed, or touching his person without previously apprising him, were avoided. . . . Then, if practitioners would content themselves with simply moderating the violence of the convulsive paroxysms of tetanus, by such agents as may be found best suited to each individual case, and, supporting their patient's strength, look to the ultimate spontaneous cessation of the disease, we sincerely believe that its mortality would be materially lessened, although it may long continue to be classed as one of the opprobria of our profession."

2. *Compressed Sponge.* By Dr. BATCHELDER.

The N. Y. Jour. of Med. contains an important article on this subject by Dr. J. P. Batchelder, to whom is due the credit of the suggestion and general application of this valuable surgical appliance.

Our own experience with it, in a variety of applications, attests its utility.

The following method of preparing the compressed sponge and applying it in mammary abscess, is given by Dr. B.:

"The softest pieces of sponge should be selected, each piece being large enough to cover the entire breast. The sponge should be carefully washed, to remove any gravel, shells, etc. it may contain; and when thoroughly dried it is compressed for a long time under a heavy weight or between the lips of an ordinary carpenter's vice. The sponge, when thoroughly pressed, should be bound as firmly to the breast

as the patient will allow, by means of a bandage passing several times around the body above and below the other breast, a piece of lint being placed between the breast and the sponge, to prevent the latter from irritating. It is then soaked with cold water, and the bandage preventing the sponge from expanding outwardly, its expansion makes the desired pressure on the breast.

The patient usually complains of pain for ten or fifteen minutes after the application. The temperature of the water dressing is soon raised to that of the body, and thus we have the essential elements of a poultice, heat and moisture, without the inconvenience of an ordinary poultice. This soft yet firm compression adapts itself evenly and equally to the whole breast, and the sponge not only forces out the matter, but absorbs it; the sponges are to be kept wet during the whole time of their application. The patient soon becomes accustomed to them, and the alleviation of suffering is so great, as to cause her to request the continuance of the treatment. The sponges should be renewed daily."

Compressed sponge in some form has been applied by Dr. Batchelder to the following uses: dilatation of the canal of the cervix uteri in cases of sterility, difficult menstruation, and for the relief of other affections of the part or organ; dilatation of sinuses; fistula in ano; dilatation of the meatus auditorius; ulcerations of nasal cavities and bones; dilatation of strictures of the rectum or urethra; hemorrhoidal tumors; dilatation of the female urethra; morbid growths of bone or soft parts; caries and necrosis; swelled testicle; syphilitic vegetations; tumors non-malignant; enlarged joints; as a styptic in hemorrhage.

3. *Statistics of Fracture.* By M. VELPEAU. (*Gazette des Hôpitaux.*)

M. Velpeau, in his annual summing up at his surgical clinic at La Charité, furnishes an account of the fractures admitted under his care during the last twelve years. These were 1,497 in number, three-fourths of them occurring in persons of the male sex. There are, however, certain fractures to which females are as liable as males—e. g. fracture of the neck of the femur. Here occupation has nothing to do with the accident, a fall producing it in either sex, age exerting the same effect in modifying the condition of the osseous tissue of the cervix in both. We may regard, also,

a special predisposition to this fracture in females as arising from the predominance of the fatty element, which is usually more abundant in them than in males. We also find a pretty equal number of cases of fracture of the lower end of the radius in either sex—the same cause producing it, usually a fall on the palm.

The following was the order of frequency of occurrence of the respective fractures: Radius, 165; femur, 157; fibula, 141; ribs, 134; clavicle, 132; humerus, 109; tibia, 60; olecranon, 34; ulna, 28; patella, 25; scapula, 10; fractures of the leg taken altogether, 164. Then came fractures of the cranium, spine, &c. From these figures it results:

1. That fractures of the radius are of most frequent occurrence.

2. Fracture of the leg comes next, but that is only when both bones are reckoned.

3. The femur comes thus immediately after the radius.

4. The fractures of the fibula alone amount to 141, but these figures do not represent all the instances of fracture of that bone, as it existed, in fact, in the greater part of the cases designated as fracture of the leg.

5. Fractures of the humerus are set down at 109; but causes of error may easily prevail here, as certain fractures of the glenoid cavity, anatomical neck, and of the olecranon, may have been mistaken for fractures of the body of the humerus, and *vice versa*.

6. Fractures of the tibia are set down at 60 cases; but it is probable that some of the cases set down as fracture of the leg were fractures of this bone alone.

7. Fractures of the forearm are put down at 52; but here the same difficulties from error of diagnosis may arise, as must be the case in any part of the skeleton presenting a complex composition and multiple bones.

8. There were 46 cases of fracture of the cranium; but the signs of this accident are always obvious. Comparing the fractures of the upper and lower extremities, we find that there are 564 of the former to 587 of the latter.

4. *On the Preliminary Treatment of Affections of the Urethra.* By M. CIVIALE. (L'Union Médicale.)

On the occasion of presenting the new edition of his work "On the diseases of genito-urinary organs" to the Académie des Sciences, M. Civiale draws its attention to procedures as yet but too little known, having in view facilitating opera-

tions practiced on the genito-urinary organs, and rendering them less painful and more successful. They consist in a special preparatory treatment. The lining membrane of the urethra is, in the normal condition, so sensitive in the majority of persons that the simplest instrument cannot be passed along it, even with the greatest care, without exciting a painful sensation of burning heat, which may go on to that of excessive pain. The sensibility of the neck and body of the bladder is less developed than it is usually supposed to be; but under the influence of inflammatory action it may become so exaggerated as to render all operative procedures impossible. When in a state of disease, in place of a simple catheter we have to introduce instruments into the urethra which, by reason of their form, volume or rigidity, induce distension or friction of the part, the suffering excited will be much increased; and when, in place of a mere temporary passage of an instrument, we have to leave it in contact with the surfaces, to execute prolonged and extensive movements, or to invade the texture of the parts by means of caustic or a cutting instrument, the severest suffering and alarming reaction may be the result. Moreover, the practitioner, disturbed by the cries and involuntary movements of the patient, and fearing the possible consequences of too great irritation, sometimes either renounces a desirable operation, or desists from its performance before he has completed it.

Speaking from the multiplied experience of many years, M. Civiale states that this sensibility of the urethra and bladder may be most effectually subdued by the methodical employment of soft wax bougies. A very small, smooth, soft bougie is to be passed into the urethra and immediately withdrawn, and the same operation is to be repeated daily. If the urethra is very irritable, the bougie is to be withdrawn as soon as the patient begins to complain, although it may not have passed far in. Sometimes the bladder is not reached until after four or five days. By proceeding with extreme slowness, and never by irregular movements, both in passing in and withdrawing the bougie, and never letting it remain, the instrument causes very slight pain, and this even is diminished every day. Very gradually the size of the bougie is increased until one is reached which fills the normal capacity of the urethra without producing distension. During this local preparation, which usually requires from eight to twelve days, any general irritation or morbid conditions that may exist should be remedied.

To appreciate the benefit of this simple procedure, it re-

quires a person to be present at a series of operations practiced on patients, who have, and upon those who have not been so prepared. Not only in the former are the operations executed with far less suffering and much more facility, but they are followed by much fewer of the consequences of violent reaction.

This procedure is not to be placed on the same line with opiates and anæsthetics, for by it we seek to obtain a slow and progressive diminution of the sensibility of a determinate organ, the action being exclusively local and in no wise changing the general conditions of the organism. When we resort to opiates or anæsthetics, we leave out of view the organ on which we are to operate; and it is upon the nervous system, the centre of life and perception, and consequently upon the entire economy, we seek to make an impression. In the one case we effectually diminish the irritability of the organ, in the other we disguise or suspend it. The one leaves the patient in the full exercise of his faculties, the other plunges him into a temporary state of intellectual and moral annihilation. "The inconveniences of opiates are well known, and I have not here to discuss the utility of anæsthetics in the general practice of surgery; but I cannot too forcibly protest against the abuse that has been made of them in the treatment of the diseases of the urinary organs. With the exception of cystotomy, external urethrotomy, and some other rare operations, the employment of chloroform is not only useless, but liable to cause the committal of grave mistakes, and to give rise to great misfortunes."

5. *Imperforate Anus.*

Dr. Dickinson (Lancet) relates a case of the above arrest of development. The patient was an infant four months old, and the stools had always passed through the penis. The normal urethral opening was also impervious; but there was a transverse opening at the base and under surface of the glans penis, through which the urine and fæces passed in common. Where the anus should have been, was a button-like depression, the skin at this part being finer and thinner than the surrounding tissue.

A crucial incision was made about half an inch deep, and a trochar and canula introduced, in a direction upwards and backwards, which fortunately hit upon the gut, as evidenced

by the escape of the fæces. The canula was maintained in the orifice.

Unfortunately the canula slipped out and the fæces again passed per penem. The operation was repeated, after which the fæces were evacuated per anum.

6. *Surgical Excerpts.*

Dental anæsthetic.—Tincture of aconite, one ounce; chloroform, one ounce; alcohol, one ounce; morphine, six grains. Mix. To prevent the pain of extraction, and destroy sensibility in the gums by local application, moisten two pledgets of cotton with the liquid, and apply to the gums, for a minute or two, over the tooth to be extracted.

Dr. Tefft—Journal of Materia Medica.

Digital compression in external inflammations.—Tansetti in Padua has written an intensely interesting article upon this subject. He speaks in the highest terms of the efficacy of the above treatment in external inflammations, and relates several cases in which inflammation was promptly subdued by checking the arterial supply to the part. In erysipelas phlegmonosum of the left arm, pressure, steadily maintained upon the subclavian artery, effected instantaneous relief from pain, and a prompt cure by resolution. Acute inflammation of the wrist was visibly favorably modified by pressure upon the humeral artery: the same result attended the pressure upon the crural artery in a case of gonarthrocace.

Med. and Surg. Reporter.

In acute otitis.—Trousseau recommends the employment of the following mixture: R. Ext. belladonna, grs. xv; aqua q. s.; glycerine, dr. iss.—*Jour. Chimie Medicale.*

Injection of sub-acetate of bismuth.—Sub-acetate of bismuth, oz. j; rose water, oz. jss.

Shake it immediately before using. The patient should urinate immediately before employing it, so that the bismuth powder may remain as long as possible in contact with the mucous membrane. Two or three injections daily, in gonorrhœa or leucorrhœa.—*Id.*

Ointment for warts.—The Répertoire de Pharmacie reproduces, from the Allgemeine Med. Central-Zeitung, the fol-

lowing prescription for an ointment strongly recommended by Dr. Blaschko for the destruction of warts: R Potassæ chromatis, 2 grs.; adipis, 1 dr.

The excrescences should be rubbed with this preparation twice daily, and in the space of three or four weeks, the most inveterate varicose productions are said to be entirely removed.

Tartrate of iron and potash in phagendic ulcer.—M. Ricord of Paris recommends this salt very highly in certain forms of syphilis. We have used it frequently, with truly surprising results. We now recall to mind a case in which a very large ulcer threatened to destroy the glans penis. The young man was brought very low by exhausting hemorrhages, and the ulcer was rapidly progressing. In consultation with his attending physician, we advised from 5 to 10 grains tartrate of iron and potash, three times a day, with a strong solution of the same constantly applied to the affected part on lint. The bleeding was soon arrested, and the deep ulcer filled up with wonderful rapidity. We have used the remedy many times since, and are always pleased with its effects in similar cases.—*Southern Med. and Surg. Journal.*

Uterine hemorrhage.—Lobach states (Wurtzburg Verhandl., viii, 3, 1858) that the *carduus benedictus*, or blessed thistle, and the *carduus marianæ*, have remarkable hæmostatic powers. The seeds of the latter are of surprising efficacy in metrorrhagia, not only checking the discharge, but preventing its return, in cases in which rhatany, sesquichloride of iron, tannin, etc. had failed. It is especially indicated in floodings, associated with portal congestions, hemorrhoids, etc., less useful where they depend on ulcerations, polypi, or other organic alterations.

Voltaic narcotism.—Dr. B. W. Richardson, professor of physiology at the Grosvenor school of medicine, has, by using electricity combined with a narcotic, succeeded in inducing local anæsthesia. He applies a narcotic solution, consisting of equal parts of chloroform and tincture of aconite, to the part in which he desires to produce anæsthesia; then covers this part with a plate connected with the positive pole of the voltaic battery, and applies the negative pole to an adjoining part. Dr. R. in this mode produced anæsthesia in a nævus on the back of an infant, when Dr. Halford transfixed and tied a ligature around the nævus without the infant giving any indication of suffering pain by the operation.

OBSTETRICS, &c.

1. *On Hypertrophic Elongation of the Neck of the Uterus in Prolapsus Uteri, improperly so called, and on its Treatment by Amputation of the Neck of the Uterus.* By M. HUGUIER, Surgeon to the Hospital Beaujon, Paris.

In this remarkable mémoire M. Huguier maintains that the ordinarily received opinion is erroneous, viz.: that the appearance of the os uteri at the vulva, or of a greater or less portion of the uterus itself beyond the external organs of generation, is the result of a displacement of the organ, of a general lowering, or of a true prolapsus en totalité; and he holds that this opinion can be shown to depend on inaccurate observation. When the uterus appears externally, and even when the vagina is completely inverted, and the uterus, from the size of the tumor in the centre of which it lies, appears to be entirely prolapsed between the thighs, it is not because it has become generally lower in level, and completely left the pelvic cavity, but simply because it has undergone a partial or general (as the case may be) hypertrophic elongation. The best proof that can be given of this is, that in almost all the cases, the body of the uterus remains nearly in its usual situation; and that, if we examine the tumor with care, and measure the uterine cavity by means of the uterine sound, or any other appropriate instrument, the elongation is easily detected. And we can equally assure ourselves of the presence of the body of the organ in the pelvis by careful palpation of the tumor, and by the introduction of one or two fingers into the rectum. M. Huguier does not treat of all the various kinds of uterine hypertrophy, but confines himself to the consideration of the longitudinal hypertrophy which simulates, accompanies or determines the descent of the uterus. The two principal varieties of the longitudinal hypertrophy—viz: as it affects the uterine neck above or below the insertion of the vagina—constitute two different diseases, although their nature is the same. Their causes, their mechanism, their symptoms, the accidents they may determine, and even the treatment they demand, are, however, quite different. Hence these two conditions demand separate consideration.

And first, with regard to the hypertrophic elongation of that portion of the uterine neck below the insertion of the vagina. This is not of so much importance as the other form of hypertrophy; and we give merely the conclusions

with which M. Huguier terminates this, the first part of his paper.

1. In this variety, the body of the uterus forms in the cavity of the vagina a cylindrical swelling, either resembling a more or less elongated cone, the free extremity of which approaches the vulva, or even passes between its labia without any shortening or inversion of the vulvo-uterine canal.

2. This elongation, which has been noticed by Morgagni, Saviard, Bichat, Lallemand, Desormeaux, Lisfranc and Boivin, was considered by them as a simple anatomical variety.

3. Even until lately, it has been commonly confounded with the sinking and descent of the uterus, when it has been mistaken and treated for a polypus, a chronic retroversion, a follicular cyst, a cancerous or a dropsical enlargement of the neck.

4. No anatomical and nosological description has yet been given of it, although it possesses sufficiently precise characters as regards its causes, development, symptoms, and treatment.

5. The medical appliances, and the different kinds of cauterisation, are only applicable to cases of slight hypertrophic elongation, and particularly to those which are of little extent, and are complicated with inflammation and engorgement.

6. When a hypertrophic elongation of the vaginal portion of the os uteri causes serious symptoms, and has attained a length of from five to seven centimetres, there is only one truly efficacious means of cure, viz: the resection of the uterine neck to half a centimetre below the insertion of the vagina.

The second part of the paper is taken up with the consideration of the hypertrophic elongation of that portion of the uterine neck situated above the reflexion of the vagina and its escape outside the vulva. M. Huguier affirms that the affection designated by authors and practitioners under the names of prolapsus and complete descent of the uterus, is nothing else, in the very great majority of cases, than a longitudinal hypertrophy of the uterus, the body of which remains in the pelvic cavity, even although the vagina be entirely inverted, and the tumor hanging between the thighs be equal or even superior in length to the uterus in its normal condition.

This proposition, startling though it appears, is the result of fifteen years' labor and conscientious enquiry. He denies the frequency of the complete prolapsus, holds that it is rarely

seen, and that it has been generally confounded with the hypertrophic elongation of the upper portion of the uterine neck. Indeed, the swelling, which up to the present time has been described as complete descent or prolapsus, may depend on two different conditions,—the one quite exceptional, viz: the true descent of the uterus with or without longitudinal hypertrophy; the other much more frequently met with, and forming the subject of the present paper. In establishing his proposition, M. Huguier relies on three kinds of proofs, viz: on cases scattered through the records of science, on pathological anatomy, and on clinical observation.

Under the first head, reference is made to cases related by Saviard, Morgagni, Dance and Cloquet.

Under the second, the magnificent work of Cruveilhier is appealed to; and M. Huguier asks, if cases of the complete descent of the uterus were as frequent as authors pretend they are, how comes it that Cruveilhier has only been able to give a single representation of the affection in a work on which he has been occupied twelve years, and which he closed with the description of the diseases of the uterus and ovaries? With the exception of two cases, observed by MM. Morel-Lavallée and Blandin, M. Huguier knows of no others where the characters of the affection have been described in such a manner as to leave no doubt as to its exact nature. Of course, in this review, cases accompanied by considerable peritoneal effusion, or with very voluminous ovarian cysts, where all the pelvic organs are apt to be pushed downwards, are excluded. Since the year 1843, when M. Huguier began to use the uterine sound, he has carefully examined sixty-four cases of pretended complete prolapsus; and of this number only two were instances of true and complete prolapsus, unaccompanied by hypertrophic elongation.

In a third case, there were at once complete prolapsus, retroflexion, and considerable hypertrophic elongation of that portion of the uterine neck above the insertion of the vagina. In this series of sixty-four cases, M. Huguier has included only those which would be considered, according to the descriptions of authors, as instances of complete prolapsus, in which the length of the tumor was at least equal to that of the uterus in its normal condition (though in most cases it exceeded this), and where the vagina was completely inverted. All cases of slight descent of the uterus, described by authors under the name of semi-prolapsus or incomplete descent, and even those where the neck and vulvo-uterine canal, partly inverted, projected from two to three centi-

metres from the vulva, were excluded. After mentioning that for some time past he has been in the practice of expounding these facts at his hospital visit, and that M. Robert, at the Hôpital Beaujon, has verified them in his own practice, M. Huguier concludes by stating that a careful examination of the various preparations in the Musée Dupuytren, along with the conservator, M. Houel, only confirms the truth of his observations.—*L'Union Médicale*.

BIBLIOGRAPHICAL RECORD.

- I. *A Treatise on Human Physiology*. By JOHN C. DALTON, Jr., M. D., Professor of Physiology, College of Physicians and Surgeons, New York. Philadelphia. Published by Blanchard & Lea. 1859. (Received through A. Morris, Richmond.)

WE have heard much of late in the American journals, and especially in the reports on the medical literature of our country presented to the Association, of the want of national industry and a home literature worthy of the name; and truly, under the heavy competition of cheap reprints of the British authors, and the difficulty of inducing students and even the profession to read American works, it was a hard task to overcome the many impediments to the efforts of the native author.

The task has, however, been successfully concluded. American physicians have earnestly contended with their imported rivals—and more than this, in several instances, they have successfully invaded the old country, and won laurels on a foreign soil, in spite of national pride and prejudice.

The very excellent treatise on physiology now before us, is worthy in all respects of commendation, and may safely be offered to the profession as a fair representative of our

home literature. It is a book original in its arrangement and mode of illustration, clear and concise in its description—and it offers to the student all the essentials of human physiology in a most attractive form.

Dr. Dalton, still a young man, early made his mark in the realms of physiological observation; and in his prize essay on the method of generation, and especially on the development of the Graafian vesicle, he won a reputable position, which will not be diminished by the work now under consideration.

II. *A Practical Treatise on the Diseases of Infancy and Childhood.* By S. H. TANNER, M. D., F. L. S. Philadelphia. Published by Lindsay & Blakiston. 1859. (Received from Geo. M. West, Richmond.)

SUCH convenient hand-books as Dr. Tanner's are always received by readers with a favorable consideration. This is emphatically the day of large books. Illustrated quartos and bulky octavos adorn the shelves of a library; but when the student spends the long hours in the search after knowledge, it adds much to his comfort to have a small, compact and light volume, which can be held in all positions without fatigue, and may be carried about his person without difficulty.

This book is the companion to a previous publication of the same author on the practice of medicine, and has the conveniences and merits of that production. While we do not regard these abridgments of the practical branches of our art as being the kind of book which should be first consulted by the elementary student, yet when more advanced in his profession, and especially when surrounded by the cares and embarrassments of practice, such works as these are, well *posted up* on all the recent advances and improvements in therapeutics, and the contents arranged in a mode easy of reference, become exceedingly useful.

The neat getting up of "Tanner's Manuals" deserves attention. Like all the books coming from the house of Messrs. Lindsay & Blakiston, this is very attractive and well printed; and as another recommendation not without value, they are offered to the public at a very moderate cost.

III. *A Treatise on the Venereal Disease.* By JOHN HUNTER, F. R. S.—*With Additions* by PHILIP RICORD. Translated and edited by F. J. BUMSTEAD, M. D., New York. Second Edition, revised, containing a resumé of Ricord's Recent Lectures on Chancre. Philadelphia. Published by Blanchard & Lee. 1859. (Received of A. Morris.)

WITH much pleasure we chronicle the appearance of a second American edition of the Translation of Hunter's Ricord, by our promising young countryman, Dr. Bumstead of New York. The success of this work, ushered before the public without any adventitious circumstances likely to attract public notice, argues every thing in its favor. Beyond dispute, it now stands as the supreme authority on the subject; and the second edition far surpasses its predecessor in value, as it contains an accurate summary of *all* the most modern principles and modes of practice employed in such affections.

Our readers should not fail to make this most necessary addition to their store of medical knowledge.

IV. *Address, Introductory to the Fifth Course of Lectures in the Atlanta Medical College.* By JOSEPH P. LOGAN, M. D., Prof. of Physiology and Diseases of Women and Children, in the Atlanta Medical College.

WE have received the above, and read it with pleasure, and with a conviction of its superiority to the mass of introductory addresses which are yearly published.

Prof. Logan's subject is the "*Status of medicine as a science and art.*" The *new lights* in medicine necessarily come under review, and the author "asserts, upon reliable authority, that in the northern portion of the United States, which may be regarded as the very hotbed of the multiplied forms of quackery, we find those who are the advocates of mesmerism, frourierism and free love, the *special disciples* of hydropathic and homœopathic delusions."

This is no doubt true, not only too of homœopathy and hydropathy, but of the various other forms of quackery; for where the mind is so constituted and trained as to embrace one monstrous delusion, it usually takes in all its kindred.

The author takes the position that these follies are *required* by a particular class of minds, and may be regarded as one of the *necessities* of the world—and that therefore it little matters whether this or that form of medical folly be in the ascendant at a particular period. He controverts the idea that the great minds who have labored in the field of medical research for two thousand years, have done so without leaving us a legacy worth inheriting, although the truth of our most cherished principles have been questioned by the same spirit which hesitates not to doubt the truths of our holy and venerated religion. He says, "the achievements of the medical men of the past have reared a temple for science and truth, not surpassed by the results of any human labor." With regard to medical delusions, he thinks they are only other examples of the operation of a fixed law, which has produced, in various periods of the world's history, a thousand and one vagaries, none of which have been too absurd to find adoption.

Statistics have proved that about the same number of murders and suicides are committed yearly over the world, and bear as uniform a relation to certain known circumstances, as do the movements of the tides or the rotation of the earth. This same uniformity of mental and moral phenomena will explain the vagaries of the human mind in the adoption of errors in medicine, and the support given to medical delusions.

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There is another consolation too to the true votary of medicine, in knowing that "pseudo-medicine, in its various forms, if advancing at one point, is receding elsewhere—if progressive to-day, it is the reverse to-morrow, and is only obeying the law of its nature, 'thus far shalt thou go, and no farther.'"

The principal point made in Prof. Logan's address is, that our noble science is *progressing*. He says, "While I would not hold out the idea of a *perfect* science or art, I have no hesitation in asserting that, excepting mathematics, and pursuits resting strictly upon it, no calling of man surpasses medicine in the certainty of its opinions, and none equals it in its positive and *increasing* blessings to society. It is eminently progressive," &c.

Elsewhere, he states that *statistics* have proved that human life has been lengthened 25 per cent. in the last 75 years; and as an evidence that this is not the result of cessation of war, or improvements in the hygienic conditions of mankind, statistics have shown that in the Parisian hospitals in 1805, *one* in *seven* died of those admitted, and now only *one* in *twelve*. We regret that we have not space to pursue the development of this part of his subject.

Prof. Logan is not willing to concede to the medical men of Europe superiority over those of our own country. He says, "I feel then, from an investigation of this subject (a mere glance at which alone I have been able to present), that while I yield to no one in the estimate I place upon the eminent medical men of Europe, the mass of medical men in the United States are *superior* to those of Europe in practical knowledge of and skill in the treatment of disease—in independence and vigor of thought and action—and that their stand-point for future improvement is far more elevated than that of the physicians of the old world."

We are disposed to think there is much truth in the following:

"I consider myself fully authorized in asserting that the regular medical men of the United States are offering an

amount of science and skill far exceeding their appreciation upon the part of the public, and furnishing a standard of qualification far higher than the people deserve, and fully equal to the demand—the highest order of science and skill in every department of our comprehensive profession, being readily commanded by every community that has any proper conception of the remuneration that should be awarded to the self-sacrifice and toil which you may be assured is ever inseparably connected with eminence in medicine.”

We take pleasure in stating that Dr. Logan, the author of this address, which we have very imperfectly noticed, is a worthy son of the “Old Dominion;” and while he is winning for himself laurels in the home of his adoption, is reflecting honor upon the state of his nativity.

EDITORIAL AND MISCELLANEOUS.

Volume Thirteenth.

At the commencement of this our thirteenth volume, we may be excused for presenting a few reflections appropriate to the period, to our kind friends. In truth, a little garrulity may be pardoned us at this time. It should be remembered that medical journals are a short-lived race, at least in our country. They reach a precocious adolescence after probably two years of cachectic infancy, badly nourished and injudiciously treated. Fortunately, they cut their eye teeth quickly, and find, to their cost, that this world is “nought but labor and sorrow”—or in more modern phrase, “there is no money in it.” Still, in spite of adverse circumstances, and by dint of an unlimited though sorely betrayed reliance in man’s trustfulness, the journal reaches a moderate circulation—still living, as most of them do, from hand to mouth,

harassed with debt, wanting the support of their patrons, starving for matter in the midst of plenty, compelled to beg pertinaciously for contributions from those who, if they were not utterly blind to their own interests, would gladly seek admittance to its pages. Under all these depressing conditions, the weary periodical falls slowly into a hopeless marasmus—a premature old age; and presently the place that knew it, knows it no more—it dies, and makes no sign; and its unhappy companions devote a hasty paragraph to its memory. Its long-suffering publisher seizes upon its effects, consisting of exchanges freely cut to pieces by the scissors, a half dozen American reprints bound in calf and black muslin, and a delinquent list of indescribable longitude.

Such is the fate of many a sanguine scheme to win reputation and develop the resources of our native profession. In our experience, these phases of the journalistic life have again and again been enacted before us. Seven years have exhibited to us the rise and fall of various promising sprouts of medical literature, who now, alas, have floated far away “adown the gulf of time;” and while we have cause to be grateful that we are yet spared to tell the doleful tale—to moralize over the decay of many bright hopes—nay, earnest strivings after usefulness and distinction—may we not profit by these repeated warnings, and take care that we too ere long be only found among the shades of departed journals.

Representing alone the medical profession of Virginia—the solitary organ of more than three thousand intelligent gentlemen—having carefully avoided any connection with cliques or personal questions—and being, we honestly believe, at peace with all the world—it would seem impossible that the VIRGINIA MEDICAL JOURNAL, in presenting its thirteenth volume to its readers, could for a moment doubt its continued and prosperous existence. But it is the part of wisdom to look the truth fairly in the face. When we are strongest and farthest from danger—when we are strong enough to tell the truth without fear of misrepresentation—then is the time to talk boldly and candidly to our friends—to tell

them what is required of them, and to claim from them undisputed and well-earned justice.

The subscription list of this journal is hardly surpassed by any rival periodical in this country, and it includes amongst its friends many of the best names in the American profession. It offers every inducement to the profession to write for its pages—proposing to illustrate, at any cost, all contributions requiring such adjuvants; and yet duty requires the editor to say that his most earnest efforts to attract the learning and practical experience of the Virginia profession to the support of their representative, fails, year by year, more and more—and he is forced to confess, with pain and sorrow (but not with shame, for *that* fault lies not at his door), that the original columns of the journal do not improve with the improvement of the science—nay, they hardly equal the productions of its younger days.

Men of Virginia, will you permit this charge of outrageous delinquency to be thrown at you, and not, at least, make an honest effort to remedy the evil consequences and shameful disgrace which must follow, unless the necessary effort is made? Can you expect us to write reviews and editorials, read books and write notices, gallop through fifty exchanges a month, to look up literary forage for lazy and careless patrons—and when we go to press, be compelled to prepare an original for our own journal? Yet this has been the fact in our experience, as witness many a lucubration through its past pages by Rusticus, Mendicus, Senex, Juvenis, Country Doctor, and other assumed titles, so that the editor might avoid the charge of egotism and self-laudation, ever ready to be made by a censorious public. Say, thinking reader and old friend, shall this continue?

Having alluded to one great cause of the failure of medical periodicals to achieve a permanent success in our country, namely, want of literary industry and ambition in the profession; we desire to close these remarks by mentioning the *second* and most potent reason why this sad result is to be feared by even the most prosperous of these enterprises.

The gross income of the Virginia Medical Journal has been six thousand dollars a year, nearly, for the past two years, and its cost of publication about twenty-five hundred a year. With this apparently wide margin for profit, we have to tell our friends that the delinquent list for two years only amounts to *five thousand eight hundred and fifty dollars*.

Now, gentlemen, if you will not work for your journal, there are those who will give value and interest to its pages, if they are *paid* for their labors—and we ask you, in all frankness, at least pay us what you owe us—pay us your subscriptions—and by the beginning of another year we will give you every month an epitome of medical literature derived from direct correspondence with all the leading centres of this country and Europe. Pay us, and your journal will present careful and interesting reviews of the many publications pouring from the press every day, instead of such miserable mockeries as now appear. Pay us, and every number will be filled with matter translated from abroad; with ample illustrations of the useful appliances and mechanical conveniences of the art. Your editor can then confine himself to his true position, instead of vainly attempting the impossible task of instructing the public without adequate support and materials. His would be the duty of collating, selecting, pruning, amplifying and arranging the matter to be presented, and directing the typographical execution of the work. Such a task would be indeed a labor of love; and dear friends, if you will heed our candid and homely admonitions, we will all live to be proud of our state journal—and we will all feel the reflected light of its constantly growing influence, in the continual elevation of our professional position.

Convention of Professors of the Medical Colleges of the United States.

It may be remembered, that at the annual meeting of the American medical association in 1858, the following resolution was adopted :

“Resolved, that we recommend to all the medical colleges entitled to a representation in this body, that they appoint delegates, especially instructed to represent them in a meeting to be held at Louisville, on Monday, the day immediately preceding the convention of the American medical association for the year 1859, at 10 o'clock in the morning, at such place as the committee of arrangements shall designate.”

In pursuance of the above, delegates from various medical schools convened at Louisville on the 2d of May. At 10 o'clock the convention was called to order. Prof. Dixi Crosby of Dartmouth college was called to the chair, and Prof. George C. Blackman of the Ohio medical college appointed secretary.

Some discussion then ensued as to the mode of organization, some wishing all medical professors present to act as delegates, and others desiring that each college should have a unit representation.

The following resolution was submitted by Dr. David F. Wright of Shelby medical college :

“Resolved, that all members of the faculties of medical colleges now present shall be considered members of this convention, but that where more than one belong to the same college, one of them alone shall vote in behalf of that institution.”

After some further interchange of views—all tending to the same wish, of full representation—on motion of Dr. A. H. Baker of Cincinnati, the following substitute was offered and adopted :

“Resolved, that a committee of three on credentials be appointed by the chair.”

Under this resolution, Prof. Crosby selected Drs. Baker, Shattuck and Haskins the committee on credentials, and the convention took half an hour's recess, for the registration of the names of delegates.

On the convention having been called to order, after the expiration of the half hour, the following colleges were announced as represented :

Dartmouth college, Shelby medical college, Missouri me-

dical college, St. Louis medical college, Medical college of South Carolina, Medical college of Georgia, Medical department of university of Michigan, University of Louisville, Cincinnati college of medicine, Lind university, Chicago, Oglethorpe medical college, Medical college of Ohio, Western Reserve medical college, Kentucky school of medicine, Iowa university, Medical college of Memphis, Medical college of Richmond, Va., Atlanta medical college, Medical faculty of Harvard university, Rush medical college.

The convention was then permanently organized, by the re-election of the temporary officers.

Dr. Wright's resolution, that members from medical colleges who are now present, be permitted to take part in the debates, but that each college have but one vote, was again taken up, considered, and passed.

Dr. N. S. Davis offered the following, which was adopted:

"Resolved, that a business committee of five be appointed by the chair, to report propositions for the action of the convention."

The chair appointed Drs. N. S. Davis, Gunn, Frost, Shattuck and Yandell.

After a short recess, to enable this committee to report, they submitted the following through Dr. Davis, the chairman:

"1. Resolved, that this convention recognize the great advantages to be derived from the action of the American medical association, in prescribing the terms and conditions on which medical degrees shall be conferred and licenses to practice medicine shall be granted; and that an expression of opinion as to methods or periods of instruction from the American medical association should be received with deference and respect, and that all pains should be taken to enforce any rules and regulations recommended by that body.

2. Resolved, that this convention earnestly recommend the American medical association to adopt such measures as will secure the efficient practical enforcement of the standard of preliminary education adopted at its organization in May 1847; and that the medical colleges will cheerfully receive and record the certificates alluded to in said standard, whenever the profession generally and the preceptors will see that students are properly supplied with them.

3. Resolved, that no medical college should allow any term of practice to be a substitute for one course of lectures in the requisitions for graduation.

4. Resolved, that hospital clinical instruction constitutes a necessary part of medical education; and that every candi-

date for the degree of doctor of medicine should be required to have attended such instruction regularly for a period of not less than five months during the last year of his period of medical pupilage.

5. Resolved, that every medical college should rigidly enforce the rule requiring three full years of medical study before graduation, and that the diploma of no medical college shall be recognized which is known to violate this rule."

Prof. Wright of Nashville moved that the resolutions of the report be considered *seriatim*; and the first being taken up, he spoke at length in opposition to it, giving a history of the previous difficulties between the American medical association and the medical colleges. He could neither vote for such a resolution, nor could he take any future part in the proceedings of a convention which should adopt it.

Prof. Brainard of Chicago thought this convention was asked to take a step fraught with peril to the harmony of the profession and its best interests; it should be met on the threshold and a solemn protest entered against it. This body did not represent the medical colleges of the country with unanimity; New York, Philadelphia and New Orleans are not represented here—and he must consider their absence as a protest against the assumption of any power on the part of this body or the American medical association to dictate the terms on which the colleges should confer their degrees or receive their students.

The admission of such a resolution would produce hostile factions both in the profession and in the colleges, and could never receive the sanction of those who had independent chartered rights to fall back upon. He was opposed to no true improvement in the medical profession, but he did object to shutting that door upon young men desirous of entering the profession, through which we ourselves all had entered.

Without definite action on the resolution, the convention adjourned until 3 o'clock P. M.

Afternoon Session.

When the convention reassembled, Dr. Bayless offered the following amendments to the first resolution:

1. To substitute in the third line the word "recommending" for "prescribing."
2. To strike out all after the words "deference and respect."

A long discussion ensued on the resolution; which was participated in by Drs. Bayless, Yandell, Palmer, McDowell, Davis, Brainard, Shattuck, Baker and Wright. The differences of opinions seemed almost as various as the number of speeches, when Prof. L. S. Joynes of the Medical college of Richmond, Va. offered the following preamble and resolutions as a substitute for the resolutions from the business committee:

"Whereas it appears that a large proportion of the medical colleges of the United States are unrepresented in this convention, and no changes in the present system of education can be effectual, unless adopted by the schools generally:

Resolved, that it is inexpedient at this time to take any action upon the proposition contained in the report presented by the special committee on medical education, at the last meeting of the American medical association.

Resolved, that with the view of obtaining a more general union in counsel and in action, upon this important subject, this convention do now adjourn, to meet again on the day preceding the next annual meeting of the American medical association, at the place which may be agreed upon for said meeting, and that the several medical colleges in the United States be requested to appoint each one delegate to such adjourned meeting of this convention."

These resolutions were amended, at the suggestion of Dr. Wright, to include the appointment of a committee of five, to take into consideration, during the recess, the various matters referred to in the resolutions, and to report thereon at the adjourned meeting.

The vote was demanded on this by colleges, and resulted as follows:

Yeas—Shelby Medical College, Missouri Medical College, St. Louis Medical College, Oglethorpe Medical College, Ohio Medical College, Western Reserve Medical College, Kentucky School of Medicine, Medical College, Richmond, Atlanta Medical College, Rush Medical College—10.

Nays—Medical College, S. C., Medical College, Ga., Medical Department University, Mich., University of Louisville, Cincinnati College of Medicine, Lind University, Iowa University, Medical College, Memphis, Harvard University—9.

The substitute was declared adopted, yeas 10, nays 9—and so the convention stood adjourned until the day preceding the next annual meeting of the American medical association.

The chairman appointed the following committee under the above resolution: Drs. L. P. Yandell, Geo. Shattuck, Geo. C. Blackman, H. F. Campbell and M. Gunn.

The Sanitary Convention in New York.—(From the Am. Med. Monthly.)

SANITARY science in general, and quarantine in particular, have been the topics of interest of the month. The sanitary convention, composed of physicians, delegates from various medical societies, and an equal number of civilians from the councils and boards of health of most of the seaboard cities of our country, held its third annual meeting in this city the last days of April.

The convention included a fair representation of those men in and out of the profession, who have made sanitary affairs a study. The great majority, however, of the active participants in the discussions before the convention were medical men, so that it was, to all intents, a medical body.

Dr. Griscom, the chairman elect, in his inaugural address, stated the object of the convention to be two-fold: the external sanitary police of cities, and the internal hygiene of society. To the first, however, the action of this meeting of the convention mainly tended, although the chairman showed, by an array of figures, the far greater necessity of a more rigid attention to the latter. In this city, he said, the loss of life from yellow fever, against which the barriers of quarantine are raised, had been, for the last fifty years only 600, while each year the mortality from those diseases which a close attention to the laws of private hygiene would entirely check or greatly diminish, has been numbered by thousands.

The principal, and about the only discussion, arose from the report on quarantine; and upon one point in relation to this subject there was a remarkable unanimity of opinion, which was embodied in a resolution by Dr. Stevens, to the effect that in the opinion of the convention, "the personal quarantine of yellow fever may be safely abolished."

The report of the committee was mainly adopted; but a portion of it, which found all existing systems of quarantine defective, and of little beneficial use, was warmly opposed, and finally referred back to the committee. The committee, as a whole, not amending the report, a series of resolutions were passed advising the continuance of quarantine throughout the year, and recommending the most careful attention to hygiene on board vessels.

A code of sanitary laws for cities, prepared by Dr. Clarke of Boston, was also considered, and after much discussion and modification by a few amendments, was adopted by the convention.

This body, although three years old, the first meeting having been held in Philadelphia in 1857, and the second, last year in Baltimore, is hardly yet in working order. Some unpleasant occurrences, which happened at the preliminary meeting in Philadelphia, threw some discredit upon the whole body; but we believe that the practical action of this meeting, and the respectable body which is here assembled, has overcome all these objections; and we consequently look forward with many anticipations to the good to be accomplished by the proceedings of this body of sanitarians.

Public health is public wealth, and nothing but good can come from the agitation of sanitary matters, by a class of men who can present the most efficient argument to the people at large, for decided action upon the subject—the argument of self-interest. If the sanitarian will show to the community, by his statistics, the value of a rigid sanitary system, and not only show it once, but repeatedly, legislative action will soon be taken to accomplish all he desires. Herein we see the benefit of these yearly meetings; for yearly, the public mind will become interested in the subject, and eventually to some purpose.

As the subjects to be reported upon next year, including those of food, city cleanliness, architecture, with reference to domiciliary hygiene, and the sale of drugs and poisons, are eminently practical and interesting, we expect the convention to be held next June, in Boston, will be more than usually attractive.

The sanitary association of New York, an organization which has arisen from the necessity of the day, and the objects of which are reform in the affairs of the city relating to health, supplies, in its deliberations, the deficiencies of the convention. It also is composed of members of the faculty, and laymen; and to this combination is perhaps owing its efficient and decisive action.

At a recent meeting, Dr. Griscom read an essay "on light, its influence upon the human system in preserving health and producing disease," detailing the baneful effects of dark cellars, dark offices, dark tenement houses, restaurants, parlors, school-rooms, &c., upon their occupants.

Finally, the academy of medicine, at its second meeting in May, listened to the deferred paper, by Dr. Harris, "on the philosophy of quarantine." The various systems of quarantine, adopted by different nations, were reviewed, and the policy of that existing in our own harbor was critically examined, and dealt with harshly, its inconsistencies pointed out, and its defects thoroughly probed. More stringent mea-

asures on board ship were recommended to be adopted, which might eventually supersede the necessity of a quarantine; but under existing circumstances, and until these sanitary regulations are made obligatory upon masters of vessels coming to this port, by legislative act, and this obligation enforced, a quarantine must be sustained.

The subject of the personal contagiousness of yellow fever is to be discussed at the next meeting of the academy. Whatever action may be taken upon it, the academy is too tardy. The sanitary convention and the association are both more positive in their deliberations, and less conservative in their decisions, and have already acted upon this subject. The golden opportunity afforded the academy to lead public opinion, is lost. Now it can occupy only a secondary position, and must be content with the reputation of echoing an opinion already expressed by another body, if it adopts the spirit of the paper read by Dr. Harris. This arises from the element of pseudo-conservatism in its constitution, which so constantly modifies its actions. It would be well if this element could, in a great measure, be discarded, or a more healthy sentiment infused into it.

Death of Dr. Mütter.

WITHIN the year which closed with the end of March 1859, two members of the most successful medical faculty which this country has seen, have passed from the scene of their labors and triumphs to a world where men toil not, nor spin, and where the ambitions of this earth live no longer. Of one of these friends it scarcely becomes the writer to speak. Kind and tender hearts, friends won by long service, and a profession served and elevated by earnest and happily directed industry, have spoken his eulogy in many ways, and in terms which are deeply felt by those who were most near to him in blood and friendship. Such ties united him to the subject of this memoir, that it is impossible to do otherwise than connect them in thought, now that death, which severed their union, has come with thoughtful charity to reunite them again. Both were Virginians, of a school almost extinct; both were trained to the courtly manners of an elder day; both were alike remarkable for professional skill and for a hospitality as warm as the hearts which prompted it.

The Rev. Frederick Ogilby of New York, a friend of Dr.

Mütter's, as well as of his colleague, has expressed in a few sentiments, and with graceful feeling, the ties which united the two professors and the points in which they resembled one another. He says:

"On opposite corners of Walnut and Eleventh streets lived two Virginians; not such as Thackeray imagines, but real native-born, actual Virginia gentlemen. They were both physicians, professors in Jefferson college, both distinguished for the highest attainments in their profession, and both true men, whose hearts and doors were always open. In their lives they were united, and in their death they are not divided. Only a few short months have intervened between the deaths of Dr. J. K. Mitchell and Dr. Thomas D. Mütter. One familiar with Philadelphia for the last few years, must feel how much its society has lost in the death of two such men. It is happy now to think, at least the writer of this rejoices in such a thought over the graves of beloved friends, that to their earthly distinction they added the gifts and qualities of true-hearted christians."

Dr. Thomas Dent Mütter was born in Eppes street, Richmond, Virginia, on the 9th of April 1811. He was descended from Thomas Mutter, a merchant of Glasgow, in Scotland, who emigrated to North Carolina before the revolution, and became connected by marriage with the family of Moore, two of whose members were distinguished for their gallantry in the battle of King's mountain, and other actions. Mr. John Mutter, the father of the subject of this sketch, removed to Richmond in early life, and was well known in that city as a successful merchant, and not less for the exercise of a hospitality such as was remarkable, even in a state proverbial for its liberal greetings, and luxurious ease. How well Dr. Mutter himself sustained the character of his Virginia home, is known to most of us, and will be long remembered by those also who have shared the generous hospitalities of his heart and house.

Dr. Mutter's mother was Miss Gillies of Alexandria, a half sister of the late General Walker Armistead of the United States army. Through this lady, he was also connected with Gillies, the historian of Greece, and with the well known families of Carter, Lee and Dulaney. Professor Mutter had the misfortune to lose both his parents before he attained his ninth year. Thus left alone in the world, he fell to the kind charge of his guardian and kinsman, Colonel Robert Carter of Sabine Hall, where he spent his boyhood. He received his classical education at Hampden Sydney

college, and afterwards spent a short time at Yale, where he intended to pursue still further his preparatory studies, an intention which was frustrated by an attack of hemorrhage from the lungs, which induced him to give up his plan of temporary residence in a far northern climate. He accordingly removed to Alexandria, where he began to study medicine in the office of Dr. Simms of that city. His subsequent studies were pursued in the university of Pennsylvania, under the immediate tuition of Dr. Samuel Jackson, still the honored professor in that institution. Dr. Mutter graduated in 1831, at the early age of twenty years, and in the spring of the same year sailed for Europe, and went to Paris, where he devoted himself to surgical pursuits, and especially to the clinics and lectures of Dupuytren.

After residing in Europe about one year, Dr. Mutter returned to this city, where he began to practice his profession, and to instruct students, with whom he soon became deservedly popular. He was at this time one of the first to initiate the practice of recapitulating, by a series of questions, the lectures to which his pupils had listened during the week. This mode of teaching has since held a recognized place among us, and is certainly of value, so long as it does not degenerate into a mere system of verbal drill.

Like most of our best physicians, Dr. Mutter obtained his first independent experience in the Philadelphia dispensary, and not long after he began to teach, received an appointment in the summer school, founded by Dr. Chapman. Here he displayed the remarkable powers as a teacher which have since become more widely known. Meanwhile, a large and increasing surgical and general practice, combined with his growing fame as a teacher, rendered him a prominent candidate for any vacant chair of surgery or anatomy. The reorganization of the Jefferson medical college in 1841 afforded the wished-for opportunity, and in company with his friend, Dr. Mitchell, the subject of this notice entered the ranks of the new faculty. A triumph scarcely anticipated by the most hopeful of those who had entered into this new enterprise awaited its future. To this result the young professor of surgery largely contributed; and when the new faculty planned and carried out their system of clinical lectures, Dr. Mutter's skill as a surgical teacher and a dexterous operator still further added to his reputation, and to that of the college. To increase the interest and usefulness of his clinic, no sacrifice was too great—no trouble to be counted. The excellent results of this method of practical teaching was

also aided by the perfect understanding which existed between himself and the professor of anatomy, Dr. Pancoast. At every important operation they assisted each other, and frequently brought to the public clinic their private patients.

Dr. Mütter's merits as a teacher of surgery, were of a rare order. We have heard as good clinical lecturers, but we have heard no mere didactic teacher of surgery whose lectures surpassed those of Dr. Mutter in all the essentials of teaching.

From the ample resources of his museum the arena of his lecture theatre was filled with illustrations, casts, morbid specimens, etc. The lecturer used no notes, save a page of his syllabus. His manner was most impressive; few lecturers had better listeners. His small and graceful frame, and the quiet ease of his social chat, scarcely prepared one for the full tones and emphatic manner in which he laid down the principles of his art.

Dr. Mütter's reputation as an operative surgeon, was deservedly high. A monograph upon club-foot, and several papers recording most daring plastic operations for the cure of the deformities resulting from burns, indicate the direction which his surgical reputation took. He had the best qualities of a good operator; and although during later years his declining health indisposed him to attempt severe operations, earlier in his career no case was too formidable. Under an appearance of excessive (almost nervous) anxiety, which was largely due to ill health, he concealed a real coolness and confidence which no surgical emergency disturbed. Again and again, the writer has seen him suddenly tested by unlooked-for contingencies, which, neither in public nor private, exhausted his resources or affected his powers. As a surgical physician, if such a term be allowable, Dr. Mütter was remarkable for the singular skill which he exhibited in the diagnosis of surgical cases. He possessed, most amply, that union of qualities which constitutes surgical tact, while no man was more frank in his prognosis, and, certainly, none more careful and untiring in the after-treatment of those who had undergone the prompt remedy of the knife. The daring which inspired his operative practice, was no less visible in the readiness with which he accepted and made use of the novelties of the day, a peculiarity which did not lessen, as too often happens, with advancing years.

Three years ago Dr. Mütter's failing health convinced him that he was no longer able to fulfill the duties of his chair;

and although his colleagues were willing to afford him any indulgence, he was indisposed to continue in a position which he could not fill with entire satisfaction to his own sense of right. He therefore resigned his office, and was, shortly afterwards, appointed emeritus professor of surgery in the college whose fortunes he had so eminently aided by his labors.

In the ensuing autumn Dr. Mütter sailed for Europe, in search of health. Before he left this country he entered into negotiations with the College of physicians of Philadelphia, intending to give to that learned body his valuable museum, and to endow it with 30,000 dollars, so soon as its fellows should have succeeded in erecting a suitable building to accommodate the collection. His rapidly failing health, and the delay necessarily attendant upon so important a matter of business, induced Dr. Mütter to postpone the conclusion of his negotiation with the college; and after providing in his will for the ultimate fulfillment of his intentions, he sailed for England.

A protracted residence abroad brought no relief to the malady whose only remedy was to be its own last and fatal attack. Weary with the endless torture of disease, he returned to this city in the autumn of 1858, when he hastened to fulfill his promise to the College of physicians, as though conscious how little time was left him for the affairs of this world. Upon the signature of the papers necessary to complete his contract with the college, Dr. Mutter left this city again, in search of the health which came no more, and turned his steps towards the south, where he spent the last winter between Savannah and Charleston. In this latter city, his constitutional malady rapidly increased upon him, and on the 16th of March he finally passed away from the kindness and generous sympathies which his character and social graces had gathered around him in a land of strangers.

This kind and christian heart, this generous and accomplished physician, has at length found the sad relief which his own art denied him here. Among those to whom he gave that ease from suffering in its manifold varieties, which he sought in vain, there will be many to regret his loss; and in the ranks of the profession, which gave him all its honors, his remembrance will be held in regard, not less for the qualities which earned success, than for the generous spirit with which he returned to his mother art the riches she had given.

One word more. From boyhood to the day of his death, the subject of this sketch was the victim of hereditary gout, which preyed endlessly upon a frame inconceivably sensitive to pain. In this round of torture there were change and variety of affliction—but of late years, scarce any interval of entire relief. Into the estimate of his labors and of his character this element should fully enter.

With this brief record of a weary and burdened, but fruitful life, we take leave of one whose kindly sympathies and ready courtesy will long be missed and mourned in the home of his adoption.—*N. A. Med. Chir. Rev.*

VARIETIES.

Medical News and Items.

NAVY MEDICAL BOARD.—The board of naval medical examiners, consisting of Surgeons W. S. W. Ruschenberger, L. B. Hunter, J. D. Miller and Passed Assistant Surgeon George H. Howell, adjourned sine die, May 23d, 1859.

Assistant Surgeons Thos. J. Turner (appointed in 1853), R. P. Daniel, William G. Hay and William T. Hord (appointed in 1854), were found qualified for promotion.

Of the competitors before the board for the ten vacancies which will probably occur, in the course of the year, in the grade of assistant surgeon, the following have been selected:

1, William Bradley, Pa.; 2, Edward F. Corson, Pa.; 3, David Kendleberger, Ohio; 4, Joseph D. Grafton, Arkansas; 5, Robert L. Weber, Pa.; 6, Robert J. Freeman, Va.; 7, William E. Taylor, Va.; 9, James McMaster, Pa.; 10, James W. Herty, Ga.

The five first named have been already appointed, and it is probable the others will receive commissions in the medical corps of the navy prior to the meeting of another board.

It is supposed that the increased activity of the naval service, in connection with the comparatively small number of medical officers, a large proportion of whom, from age and physical disability, are incapable of active duty, will induce the next congress to authorize a considerable augmentation of the medical corps. Should this conjecture prove to be correct, it is probable that from forty to fifty assistant surgeons will be required to fill new appointments in the course of the year 1860. Those young members of the profession who are desirous to obtain admission into the naval medical corps, should begin now to prepare for the competition, which will be open in the course of the next spring.

EXPECTATION OF LIFE.—Mr. Charles M. Willick of London has established an extremely easy rule for expressing the value of the property which every man, woman and child possesses in life. His formula stands thus:

$$e = \frac{2}{3} (80 - a);$$

that is, "the expectation of life is equal to two-thirds of the difference between the age of the party and 80." Thus, say a man is 20, two-thirds of the years between 20 and 80 are 40, therefore forty is the expectation of life. A man now sixty will have an expectation of fourteen years more; a child of five will have an expectation of fifty, and so on. The results obtained by this new law correspond closely with those of Dr. Farr's English life tables, constructed from an immense mass of returns.

A SECRET WARD.—In one part of the establishment at Wurzburg, there is a suite of six or eight apartments, which is called the "*geheime abtheilung*," or secret department. This feature distinguishes many of the German lying-in hospitals, and it enables the victims of seduction and illicit love to conceal their shame from the open gaze of the world. Here, the young lady, who has "loved not wisely but too well," may retire from society before her disgrace becomes apparent, her friends believing meanwhile in some pleasing fiction, that she has gone on a tour to visit England, or to enjoy the gaieties of Paris. Here she enters, seen by no human eye, save that of the hospital attendants, who all are trustworthy, and sworn to implicit secrecy; here she lives till her confinement is past—never called by her name, but merely designated by a number; and when the event is over, she again passes out into the world, and perhaps talks of the celebrities she has seen in Pall Mall or Rotten-row, or of the beauties of the Champs Elysées.—*Dr. Adam.*

MEDICAL PEERAGE.—An English newspaper has prematurely announced that Mr. Brodie, the president of the medical council, is to be made a peer, with the title of Baron Betchworth; and Punch even has added its satire in favor of medical peerages, as follows:

If the good sword may claim its fee
In titles, as our codes determine,
'Twere no unseemingly thing to see
The scalpel laid away in ermine.

You peer, for having understood
All the dark labyrinths our laws have,
What saving clause has done the good,
That Brodie's forceps' saving claws have?

To cut bad throats, and stretch bad necks,
Are claims on fortune's purblind goddess,
But clear-eyed honor gladly decks
The man who heals good people's bodies.

VIRGINIA MEDICAL JOURNAL.

AUGUST 1859.

ART. I.—*On the Therapeutical Application of Alterants, and the Rules which should be observed in their Administration.*
By L., Henrico County, Va.

IN constitutional maladies, or in local disorders connected with constitutional derangement, alterants are most frequently exhibited. Constitutional diseases may be either acute or chronic, feeble or inflammatory, cachectic or scrofulous. Constitutional disturbance may produce local disease, or be induced by it. In the majority of chronic complaints, there is generally the precedent of disorder of the stomach, duodenum or liver. Sometimes disordered function commences in the skin or kidneys; but there are few cases of predominant, primary, functional irregularity of either the skin or kidneys. The latter organs are so isolated from external causes of disease, that they seem almost incapable of originating morbid action. The renal function is subsidiary and in part vicarious to the office of the skin, and is in close dependency to the chylo-poetic viscera. Deranged digestive function is generally the source of irregularities in the function of the kidneys. The brain, in civilized society, is unduly excited, and liable to disordered function, which may precede changes of structure in the cerebral mass. But the brain rarely suffers abiding mischief, unless the functions of

the abdominal viscera become disturbed. In this connection, I have not an exclusive reference to those kinds of disease which are to be detected upon a slight examination of the functions of the sub-diaphragmatic viscera. The brain, lungs and abdominal canal and subsidiary organs and the kidneys may each become functionally disordered, and finally diseased structurally by some general diathesis of either an acute or chronic character. Idiopathic fever I hold to have a substantive existence. Its series of phenomena have been well delineated by Southwood Smith; and to his able work I would refer for an explicit and satisfactory exposition of those lesions of innervation, circulation, secretion and of nutrition, which occur in fever.

Struma is a constitutional affection—not a disease of any one portion of the tissues, such as the lymphatic system, but a morbid condition of the constitution, which is almost omnipresent; for it is liable to seize upon nearly every organ and texture of the body. We cannot trace the origin of this malady to any one department of the tissues; nor can we localize it primarily in the digestive apparatus, as some distinguished writers have done.

The venereal disease is another constitutional affection. Mercurial is another. Gout and rheumatism (especially when hereditary) are clearly constitutional maladies. In all these general or constitutional maladies we employ alterants. In an article published in the 4th volume of the *Stethoscope*, owned by the Medical society of the state, the writer observed that alterants act in a way, first, that is not accompanied by sensible evacuation; secondly, in a way which does not disturb the regular procession of the functions and actions of life; and thirdly, in a way which is subversive of abnormal or deranged action, by a process of either suspension, alteration, or substitution of action.

In the treatment of those topical affections which are grafted upon the different diatheses, we call into constant requisition alterant remedies. In acute, as well as chronic inflammatory complaints, alterants are liberally employed.

In arachnitis, peritonitis, pneumonitis, and various other inflammatory diseases, we avail ourselves, after free sanguineous depletion, of the alterant agency of tartar emetic and calomel. The power which tartar emetic possesses in suspending febrile and inflammatory action, is clearly dependent upon an alterant, and not upon a contra-stimulant agency. The tolerance of the stomach for the remedy, and its very limited sensible action in producing evacuation of any kind, show us conclusively that it exerts a special alterative influence upon the morbid processes set up.

Dr. Chapman, in his *Materia Medica and Therapeutics*, entertains a similar opinion in reference to the powers of antimonial preparations in fever.

Maryall, an eccentric physician, who published a small *Treatise on Therapeutics*, the 21st edition of which was printed in 1790, testifies to the alterant action of antimony in fever.

The combination of small doses of calomel and emetic tartar, as is well known, with the nitrate of potash, in fever and in the phlegmasiæ, is of superior excellence in bringing about a reduction of the force of morbid action, and in arresting lesions of structure in important organs. The excitement, however, must be brought down, when intensely exalted, by the lancet and other depletory means, before the combination can be made to secure the desired alterant result. The restoration of the secretions of the liver, skin and kidneys, is one of the most signal manifestations which we witness, as the incidental and consecutive phenomena, arising upon the use of the above combination. This triple union of articles, so decidedly alterant, does not owe its valuable febrifuge and antiphlogistic qualities to the evacuations which may follow its exhibition.

I have already declared my conviction that alterants are in possession of a three-fold mode of agency; the power of restoring the secretions, exerted by the combination referred to, is collateral to the power of suspending morbid processes and of creating an altered action. The *pulvis antimonialis*

and ipecacuanha possess alterant properties inferior to tartar emetic in febrile and inflammatory seizures; but either may advantageously be given in certain forms of febrile and inflammatory excitement. When there is an obstinate persistence of fever, or of acute inflammation, threatening the destruction of some vital portion of the system by the superintention of a rapid disorganizing change in the structure of the parts affected, our final resort is to mercury. Speculative plausibilities may safely be indulged in as long as they do not cloud our discrimination of disease, and intercept the full application of decisive measures for the relief of the sick. But let the ultraist in medicine beware how he decides, *a priori*, that fever is a simple and easily governed form of morbid action, dependent upon a primary inflammation of some viscera—and that to arrest fever, all that the physician has to do is to ascertain the point of original disturbance, and to subdue the disordered state of that suffering organ. Fever is a very complicated affection, and is by no means amenable to any exclusive mode of medication. But of all the remedies which chemical science has conferred upon the art of healing, there stands no single article so eminently endowed with diversified capability of curing disease, as calomel. Assuredly, no remedy with which I am acquainted exerts a thorough alterant agency equal to this great medicinal substance. When I declare its powers are unique and unrivaled, I only embody the general testimony of the profession in its favor. No medicine is as frequently appealed to in the southern and western parts of our country, for the cure of fever, as this common preparation of mercury. And although its friends have often proved its worst foes, from the misguided and indiscriminate manner and abusive extent to which they have exhibited it, still it survives the assaults of its enemies, and the perverted applications of its idolatrous admirers, as one of our surest, most decisive and effective agents in the cure of severe febrile and inflammatory attacks. Mercury, however, when unduly urged, often creates an inflammatory irritation, in which coagulable lymph may

be poured out. That mercurialism is productive of a species of constitutional disturbance involving both the nervous and vascular systems, we see exemplified every day. The alterant power of the remedy may be exercised without the accompanying disturbance of the constitutional energies. Lesions of secretions and lesions of nutrition often destroy life by encroaching on the integrity and vitality of these organs. Thus we are taught by pathological anatomy, that effusions of pus, serum and coagulable lymph are the frequent terminations of inflammation in the brain, thoracic viscera and abdominal organs; and thickening, induration, softening and ulceration are often seen as the modes in which the severe morbid actions of the parts come to a disastrous conclusion. The alterant powers of mercury are never to be overlooked in such cases of disease.

I wish not to be misunderstood on such a grave practical point as that under consideration, and I therefore distinctly state that I place the use of mercury and tartar emetic as alterants, as subsidiary and co-operative to the general and topical evacuations of blood, and other methods of reduction, in severe febrile and inflammatory complaints. But after the reduction of the moving forces of the circulation by our evacuant remedies, we advert, with a strong hope of a happy issue, to the exhibition of these excellent remedies.

Fever, inflammation and syphilis have been often cured without alterants; but this affords no strong reason against their judicious employment—as I am well convinced that on the ground of an enlightened and humane expediency, it would not be proper to pretermitt their administration. In chronic complaints alterants are chiefly employed. The extensive sway exercised by the chylo-poetic viscera in inducing disordered states of the thoracic viscera, have long been recognized, and made the basis of therapeutical interference. The encephalon likewise is very often brought into a morbid condition by the disturbing influence exerted upon it by abdominal irritation. The general nervous system is peculiarly alive to the abnormal action going on in the organs of

nutritive life. The skin and kidneys are, as I have already observed, often thrown into morbid conditions by the disordered functions, or structural changes of the chylo-poetic viscera. I will bestow a brief consideration on the related diseases of the three great containing cavities, and deduce from the examination of the connections and modes of communication of the morbid actions of the encephalon, thoracic viscera and abdominal organs, some inferences respecting the exhibition of alterants in such affections.

Diseases, generally, may be related, 1st, by predisposition ; 2d, by etiology ; 3d, by the seats they occupy ; 4th, by extension ; 5th, by remote changes ; and 6th, by conversion or substitution.

1st. Predisposition may be either hereditary, acquired, or sexual. That many chronic maladies affecting different parts of the system have their substratum in the hereditary proclivity or tendency of the constitution, is universally admitted. Struma is a disease transmitted from parents to children ; and such is the strong bias of this peculiar morbid action in some families, that when any other kind of disease is established in the system, that new form of morbid action is soon modified by pre-existing tendencies of the organism to scrofulous derangement. All the organs and tissues are brought under the dominion of this strong predisposition ; and no matter what species of abnormal movement arises in the system, the subsequent phenomena partake much of the nature of this strumous diathesis. Tubercular deposits often occur in such instances in various parts of the body. The same relations exist between affections of the brain, when hereditary predisposition reigns in different members of the same family. Chorea, epilepsy and madness are thus related. One member of a family will have chorea, one, epilepsy, and another, madness ; or there will be an alternation of these affections in the same individual. Acquired predisposition is as familiar to the eye of an experienced and observant physician as a hereditary tendency to disease. The tubercular cachexia may be heredi-

tary, or it may originate from modes of living. A predisposition to phthisis pulmonalis is often generated by a too rigid and abstemious regimen. During the prevalence of the epidemic cholera in a western state, I am informed persons brought on a fatal tendency to a tubercular formation in the lungs, by their pertinacious adherence to a course of living too reducent and attenuating. Paludal exhalations induce in man a state of predisposition to certain forms of febrile disorder. This state of predisposition is called by some authors the latent period; by others, the stage of incubation; and may be regarded pathologically as a stage of formation, in which the system lies under the power of a remote cause, without a sensible disturbance of its powers; or if not entirely dormant, the morbid agent has not acted so energetically as to evolve well marked febrile phenomena. When brought under a predisposition to bilious fever, there exists an assimilating character about the system, which blends hepatic derangement with every morbid action, however induced, that may be set up. This is exemplified in cases of pleural inflammation in persons living in a miasmatic district of country. The pleurisy is invariably complicated with symptoms of bilious fever. So familiar is the relation of diseased actions, that we designate the complication by the very popular title of bilious pleurisy.

2d. The causes of disease induce intimate relations between morbid affections. The cause of epidemic maladies is some poison existing in the atmosphere. This agent acts on the vital endowment of the system, not simply as an excitant or a depressant, but as a modifier of the living energies, perverting their normal operation. The related diseases springing from the impression of marsh miasmata, are frequently seen among us. Ague, mild remittent, inflammatory and congestive bilious fever, with dysentery and hepatitis, are related to each other by paternity.

3d. Diseases are related to each other by the seats occupied by them. An inflammation in one part of a mucous tissue, in virtue of the connection existing between the en-

tire mucous membrane, is very apt to spread to other portions of the same structure. And in rheumatism there exists a local tendency in the disease to shift from one part of the fibrous system to another; and in consequence of this law of pathological action, the heart often becomes the seat of the transferred inflammation.

4th. Diseases are related to each other by a pathological law of extension. The direct nervous communication existing between organs, their vascular relation, their functional union and their contiguity to each other, are elements which constitute the law of extension in diseases.

5th. Diseases are related to each other by conversion. Substitution of morbid action may arise in several ways. An irritation existing in the chylo-poetic viscera may induce irritation in the lungs; this irritation may then cease, and the secondary or resulting malady pursue its fatal march; or a morbid action may be suddenly suppressed in one part, and a diseased state of another part suddenly springs up. This I have seen in the retrocession of eruptive maladies.

6th. Diseases are related to each other by remote changes. Thus, a morbid state having affected one part at one time, is disposed in some persons to seize on other parts at another time. Hemorrhoids, hemoptysis, diarrhœa, and cutaneous eruptions succeed each other in some persons. Dropsy, followed after a short time by rheumatism, and that succeeded by gout, have been seen.

In conducting the treatment of chronic affections by the administration of alterants, it behooves me to keep in view these relations and connections of morbid action. The empirical employment of any class of medicines is earnestly to be avoided by the enlightened physician. No arbitrary juxtaposition between the name of a malady and its appropriate means of cure, should exist in his mind. In our endeavors to arrive at just conclusions in reference to the true indications of cure in disease, we should take into consideration points of pathological enquiry.

Time and space will not permit me to enter farther into



detail on the subject of the applicability of alterant medicines in the various forms of diseased action to which the human body is subjected. I will now make a few remarks on the subject of some of the rules to be observed in their administration.

The first rule, then, to be observed (which is of no small importance), is, a due preparation of the system for the reception and appropriate agency of the alterant we are about to administer. In acute maladies, this rule is of especial authority. In high inflammatory action, bleeding, general or local, should precede the use of our alterants. Where the constitutional powers are reduced, we should not institute the alterative plan of treatment till the constitution has been invigorated by a course of preliminary treatment. This provisional measure is of paramount weight in the employment of mercury in cachectic or broken down constitutions. We may speculatively expatiate on the stimulant action of mercury; but in the practical application of the remedy, we are taught by experience not to expect from it any benefit in cases of shattered and innervated vital powers. Where it is deemed of absolute importance to exhibit mercury to enfeebled patients, we should gradually employ it in combination, or coterminously with tonics. Mere debility, however, is not to deter us from the use of alterants of the anti-inflammatory or anti-phlogistic character; for that debility may be but a symptom of some deep seated inflammation.

On these most interesting points of practice I cannot dwell, but they are of such magnitude and of varied applicability in the treatment of acute and chronic disease, that they are deserving of more expanded discussion than I can now go into.

Where the general powers of the system are prostrated by the suffocated excitement of fever, the phenomena present indicating what is generally called congestion, the mercurialization of the patient is often your best resource. This step is not always decisively useful; but it holds out,

after counter irritation, and moderate depletion, by cups over the chest, abdomen and head, our most effective means of preventing lesions in the great splanchnic cavities. In chronic affections, there may coexist either an absolute or relative plethora. In absolute plethora, the plethora *ad molem* of the ancients is known by vascular fullness and other evidences of full health. In relative plethora, there exists partial determinations of blood to particular organs, with a constant tendency to congestive irritation, suppressed or disordered functions of the secretions. In both absolute and relative plethora, we must reduce action before we administer alterants. But by judicious combination of remedies, within certain limits, we may control the plethora, whilst we are instituting an alterative plan of treatment.

The second rule which should govern us in the employment of alterants, is not to attempt the attainment of too sudden a result. Time is an important element in the beneficent influences to be exercised by alterants. This remark has special relevancy to chronic diseases. To subvert long established disordered functions or to displace structural alterations by this class of remedies, we must adapt the quantity given to the excitability of the body and of the deranged organs, and protract the use till, through a gradual, slow process, the morbid action is overcome by gentle solicitation, rather than by a severe aggressive medication. Sir Wilson Phillip informs us, in his treatise, entitled *The Influence of Minute Doses of Mercury*, "That he has for thirty years employed minute and frequently repeated doses of mercury, and that he was led to this practice, by observing, that in lessening the dose and increasing its frequency, in proportion as we lessen the immediate, we increase the alterative effects."

In connection with the treatment of pulmonary diseases, veratria has received high encomiums by Dr. Norwood of South Carolina. Many other physicians of the south as well as of the north and southwest, speak in the most extravagant terms in favor of this article. In combination with

phosphate of manganese, together with sanguinaria, glycerine and syrup of tolu, it is regarded almost as a specific in phthisis pulmonalis. One ounce each, I think, of glycerine and syrup tolu to two grains of veratria and sixteen grains of hypo-phos. manganese, are advised, in doses of thirty drops of this mixture, with a view to the alterant, tonic and other effects on the organism, constitutionally and topically.

My medical brethren, in this section at least of Virginia, have made but few trials, if any, so far as I know, with veratria in this connection.

The next rule of importance in conducting the treatment of diseases by alterants, is to combine them with other remedies in such a manner as to secure more certainly our indication. Alterants may be variously combined with each other to fulfil this condition. In acute affections demanding their interposition, we unite tartarized antimony with calomel, or ipecac. with blue pill, that we may more effectually change or subvert morbid processes going on in the system. Anodynes to abate morbid irritability or suspend existing irritation, we combine with our alterants, that their action may not be frustrated by excessive nervous mobility. Tonics may be advantageously combined with alterants in cachectic forms of disease. The sulphate of quinine or the infusion of quasia is well adapted to this design.

Another rule to be noticed is, that of selecting the particular preparation for the case in hand. In affections of the skin the bichloride of mercury is incomparably the best preparation of the mercurials. Eight grains of this preparation, with eight grains of muriate of ammonia, is to be dissolved carefully in a small quantity of water, and made into sixty-four pills, with crumb of bread. Give one of these pills three times a day, the patient taking at the same time a decoction of sarsaparilla to the extent of a pint a day.

Another rule, which should be observed in the administration of alterants, is a careful observance of regimen. Regimen and treatment must not be overlooked whilst we are bringing our patient under the alterative agency of medicine. The quantity as well as the quality of food must be

made a matter of strict injunction on the part of the attending physician. But here the patient is apt to array habit and appetite against the judgment of his physician. The point is one of deep import, and pregnant with the issue of the trial instituted by his medical adviser for the restoration of his patient's health, and should not be surrendered to the discretion of the sick man. Articles of diet may not offend the stomach of the patient, and yet be injurious to him, by affording too much stimulus to the chylo-poetic organs, and by imparting a too abundant nutrition. In chronic cases, the successful issue of the application of this class of medicines is marked by the recession of deranged sensations, deranged functions, and abnormal vascular action. The lesions of secretion and of nutrition, which occur so frequently in chronic affections, are often the pathological phenomena which spring from protracted irritation. This irritation may be in the brain, lungs or chylo-poetic apparatus, or it may be constitutional. Latent irritation may persist, with but little functional disturbance of the organ affected by it. This element of chronic disease makes the diagnosis one of much perplexity.

The first appearance of the beneficial operation in chronic affections, is that which is exhibited by the innervation. The deranged sensations which existed in the head, chest, abdomen, back and limbs, are mitigated; the constitutional irritation is lessened; and the almost neuralgic state of the skin gradually leaves the patient. Pain in the head, either cephalalgia, or a species of *tic-douloureux*, persistent or intermittent, is a frequent symptomatic affection, dependent upon the state of the chylo-poetic viscera. The rectification of the disordered function of the organ of nutrition will not always remove the pain in the head.

In order to make plain the views which I entertain, or the difficulties which the clinical physician meets with in the elucidation of dubious pathological conditions of the system, and of particular organs, I could give some practical exemplifications of disease; but already this article is spun out, I fear, to a tedious length.

L.

ART. II.—*Chronic Pneumonia—Its Symptoms, Causes, Treatment, and Connection with Tubercular Phthisis*. By ALFRED B. TUCKER, M. D., of Clarke County, Va.

THE existence of chronic pneumonia has been and still is denied by many persons. Laennec, though denying its existence as rational or scarcely possible, yet adduces cases which he admits were of this nature. We can see no reason why the lungs should be free from this form of inflammation, since we find other organs, equally vascular, the subject of it; and their functions would be no more interfered with by its existence than by the hepatization of the acute form of the disease.

We apprehend, however, that much of the doubt concerning its existence has arisen from the fact that it is confounded with the first stage of tubercular phthisis. And we confess, that in a person predisposed to the latter disease, it is hard to say where pneumonia ceases and phthisis begins. The doubt too is strengthened by post-mortem researches, which show a condition of the lungs so closely resembling incipient tuberculosis, as to escape the notice of the superficial observer, and even of so correct a pathologist as Laennec.

But while we acknowledge these difficulties, we have seen and read of too many well authenticated cases to doubt its existence as a distinct disease. It is true, that it is the precursor of phthisis in many instances, but not in all; and we are forced to believe that a lung in a state of chronic hepatization may entirely recover its functions, and leave no trace of disease behind. We therefore contend for its distinct existence: 1st. From analogy of other organs. 2d. From symptoms pointing to it as such.

The symptoms are the same as of acute pneumonia, bearing in mind the difference always found between acute and chronic inflammation. The fever is not so great as in the acute; the pulse still quick; breathing short; cough continues, with considerable expectoration; though the pa-

tient has in some degree recovered his appetite and strength, still he is not well. An examination of the lungs will detect dullness upon percussion and bronchial respiration.

The history of the case will always give a ready clue to the diagnosis, since it is generally preceded by acute pneumonia, or at least a sub-acute attack, and has not the history generally accompanying phthisis.

Its cause is found in the preceding acute attack; for we cannot imagine a *chronic* inflammation of any organ which is not preceded by the acute form. It is true, that the latter may sometimes be latent, and unsuspected, but the changes found in chronic inflammation are not the work of a day, but are gradual and slow. To speak, therefore, of pneumonia *originally* chronic, is wrong, since it gives the impression that it was so at the beginning.

Some writers (and among them Dr. Graves of Dublin) look upon it as a scrofulous inflammation of the lungs, existing only in strumous persons, or those predisposed thereto. We are inclined to doubt so sweeping an assertion as this, since we have seen cases in which there was no symptom of scrofula either in the inception, progress or close. It is no doubt frequently the offspring of a strumous diathesis; and being, as we believe, frequently the exciting cause of the development of tubercles in the lungs, many have been misled, but we have no doubt of its existence as a distinct inflammation.

But while we take this position, we believe that both forms are found. For example, post-mortem examination shows the existence of two kinds of consolidation of the lungs resulting from this disease. The first is a gray hepatization, sometimes granulated, and which so closely resembles the *accidental tissue* described by Laennec, as to lead him to look upon it as the first stage of tubercle; and this may be scrofulous chronic pneumonia. The second is *red* hepatization, which, being generally found in chronic pneumonia preceded by an acute attack, may be regarded as distinct from the strumous form.

The treatment of chronic pneumonia is very simple. It does not consist in purgatives, mercury, or any anti-phlogistic, but in an alterative tonic treatment.

A few winters ago we met with several cases, succeeding acute attacks, and with the old notions on the subject, tried mercurialization as the remedy. Calomel was pushed to ptyalism, without any good effect; and acting upon a suggestion gotten somewhere, we gave iodide of potassium in 5 gr. doses. The result was almost magical; a solidity that we could not otherwise remove gave way to resonance, and we had the satisfaction of seeing every patient recover under its use, and not one case followed by phthisis.

Based upon this experience, we would recommend the iodide of potassium, combined with external counter-irritation, and also change of scene, and good wholesome food.

Now, it may be asked how does the iodide act, if this is not a scrofulous affection. We answer, that though in the beginning there may be no predisposition to the development of tubercles (which is scrofulous), yet any irritation about the lungs, when connected with a depressed condition of the system, is liable to develop tubercles even in the lungs of a person not otherwise predisposed thereto; and the effect of mercury, carrying with it a debilitating influence, would increase the chances of such development; whereas iodine, while it acts on the absorbents, acts also as a tonic, and tends to prevent the deposition of tuberculous matter even in those cases predisposed thereto.

This brings us to the consideration of the last point, viz: the connection of chronic pneumonia with the development of tubercular phthisis. And as necessary to the discussion of this point, let us define our views of the causes of phthisis.

There are two varieties of phthisis—one *hereditary* or *asthenic*; the other, *acquired* or *inflammatory*, while certain causes may produce a combination of the two. We know that some (among whom we may class Laennec, Chomel

and Louis) contend only for the asthenic form, and others (of whom are Broussais, Cruvelhier and Andral) contend equally for the inflammatory. In other words, the former say that tubercles are seldom the result of inflammation or irritation—the latter, that they always are.

Of course, where such high authority differs, we cannot decide; but as is frequently the case, the middle is the true ground. Let us take an example of the former. Every one in his practice has met with cases which have always had a scrofulous or tuberculous tendency. (Tubercles are sometimes found in the lungs of a foetus in utero.) Let a person so predisposed be deprived of good food, sufficient clothing and fresh air; confine him to a room to work over his bench, with little or no recreation, and he will ultimately die without any cause specially to localize his disease. But let the same person be placed in the country, with a supply of good and sufficient food—able to take daily exercise in the open and pure country air. It is probable he will always be delicate—but it is possible that he may live for many years. But let him take cold. A subacute pneumonia may be established, which will baffle the power of the physician to detect, since there may be the absence of all physical signs, until several weeks have elapsed, when the whole of one side may be found dull on percussion; tubercular matter will be rapidly formed, and the patient will die of consumption in a short time. This last case we call a combination of the two kinds.

Now, take a case of a man, hearty, robust, without any hereditary tendency to tubercles. He takes cold; which results in acute, sthenic pneumonia. After the necessarily active treatment, he is supposed to be convalescent; but still a consolidation of his lung remains. Weakened by the disease, and without appetite, he is exposed to the debilitating causes of disease. Now, if the condition of the lung is relieved, he is entirely restored, without any tubercles; but if it continues, the debility of the system and irritation

of the lungs cause the development of the tubercular cachexy, and the patient dies of phthisis. This is the acquired or inflammatory variety.

To sum up the views thus expressed by example—views, the result of our own limited experience, and of those authors whom we have consulted, we say:

1st. Chronic pneumonia may exist without any tubercles in the lungs, and in persons not predisposed hereditarily to tubercular development.

2nd. Where there is a predisposition to tubercles already existing, chronic pneumonia will produce them where they have not actually existed, and hasten their maturation when they are at rest.

3rd. That acting in conjunction with any cause having a tendency to debilitate the system, chronic pneumonia may produce the formation of tubercle in a person not at all *predisposed* to their formation.

ART. III.—*Use of Alum on Bougies in Stricture*. Reported by EDMUNDS MASON, M. D., Resident Physician, Infirmary of the Medical College of Virginia.

RICHARD, black, æt. 44; abode, Hanover co. Va., employment, factory hand; previous health, very good; admitted April 28th, 1859; disease, stricture urethræ.

History.

It is stated by the best authors, that gonorrhœa is the most fruitful cause of this particular class of strictures; and this case was no exception; for the patient states that he had clap four years previous to his visit to this hospital; that it did not entirely get well for upwards of eight weeks; and then, he observed that the stream of urine was much attenuated, and it required much exertion on his part to empty the bladder. He was treated by a physician for several weeks;

but the disease progressed up to the time of his admission into this infirmary.

Report.

When admitted, his condition was more critical than might have been expected; great emaciation and debility; very little appetite; tongue furred; bowels constipated; pulse feeble; respiration hurried. The smallest gum bougie could not be introduced into the bladder. It was subsequently ascertained that two strictures existed—one about four inches from the orifice of the urethra; the other (by far the most obstinate), just in front of the membranous portion of the urethra, six or seven inches from its orifice.

Such being the condition of the parts, the patient passed his urine guttatim; and the dribbling was continual, soiling the patient's clothing, and rendering his person odious to himself and to every one who came near him.

Treatment—Constitutional and Local.

The constitutional consisted of tonics and stimulants. *Ferri et quinae cit.* grs. v, taken three times a day, with a liberal allowance of porter or grog, improved his general health very much. An enema was occasionally administered in order to overcome the constipation. The local treatment consisted in the cautious use of bougies; injections of *atropiæ sulphas.* grs. ij, to aq. ʒi; *zinci acetas,* grs. v, to aq. ʒi. The first stricture soon yielded; but that next the membranous portion of the urethra resisted until bougies dipped in *pulv. alum* were used. The very first attempt was successful, when every other admissible means had failed. What the rationale of this treatment is; let others attempt to explain. In a few days we were able to introduce the largest size catheter without using alum, the stricture having entirely yielded. But in order to prevent recontraction, the patient was provided with a flexible metallic bougie, and directed to pass it into the bladder from time to time.

June 9th.—Discharged, cured.

TRANSLATIONS AND SELECTIONS.

- I. *Clinical Lectures on the Diseases of Women.* By J. Y. SIMPSON, M. D., F. R. S. E., Professor of Medicine and Midwifery in the University of Edinburgh.

On Phlegmasia Dolens.

GENTLEMEN—I wish to speak to you to-day of a disease that is by no means infrequent among puerperal women, and which has been treated of under many different designations. It has been named phlegmasia alba, phlegmasia alba dolens, œdema lacteum, white leg, and finally, crural phlebitis. I wish to direct your attention to this subject now, because some of you have had an opportunity of observing it in a case in our ward, where the disease presented itself in an unusual form, and with some peculiar modifications. Let me first of all read to you the history of the case, as it has been drawn up for me by my clinical clerk :

“E. A., aged 40; admitted February 7, 1859; married nineteen years. Has had five living children, and three miscarriages. The last miscarriage occurred nearly two years since. The last child (a girl stillborn) was born on January 3 of this year. Her labor was a tedious one, and was attended during its first stages by a considerable amount of hemorrhage; but she had no flooding afterwards, and states that the lochia have been very scanty, as also the mammary secretion. She remained comparatively well until the thirteenth day after delivery, when she first noticed a tenderness of the popliteal space behind the left knee, which tenderness gradually increased in extent towards the ankle, but did not affect the thigh. The leg below the knee began to swell, and at last became tense and painful on all sides. A discoloration of the back of the leg now began; and the veins over the calf and towards the ankle became hard, tender and swollen. Fomentations were applied to the part, and bran poultices as soon as the swelling began to appear.

The first day on which the swelling and discoloration were noticed, she was affected with rigors two or three times a day, and these have continued ever since. She has had no

pain in the right leg, back or groin. She is unable to keep the left leg straight. The swelling and inflamed veins extend from the popliteal space to within two inches of the ankles; very tender. The foot pits slightly on pressure; bowels costive; appetite bad; pulse 120. Sleeps pretty well; has an anæmic appearance. No tenderness over the abdomen. To have hot fomentations constantly applied to the part, and tinct. ferri muriatis, gtt. xx, thrice daily. Passes plenty of urine.

February 10th.—Complains of great pain in the calf of the leg, frequent rigors, and sleeplessness. Bowels very costive. To have a dose of aperient medicine occasionally. There is a feeling of fluctuation about the centre of the discoloration, and great tenderness on pressure. To continue the fomentations.

13th.—An incision was made into the suppurative swelling, and more than sixteen ounces of pus escaped, mixed with a little blood. To continue the fomentations.

15th.—The discharge of pus still continues; the pain has disappeared, but there is still great tenderness on pressure, and inability to extend the leg. Ordered ferri et quiniæ, citratis grs. ij, ter die. Pulse 89.

22d.—The suppuration has ceased almost entirely, and but little tenderness remains, except at the upper part of the swelling, near the popliteal space. To have bandage and water dressing.

March 8th.—Patient continues to do well; the pain, swelling and tenderness are rapidly disappearing. Has had no rigors for eight days, but complains of much weakness. To take potassæ chloratis, ʒij, aquæ bullientis, ʒij, a tablespoonful three times a day; and tinct. ferri muriatis, gtt. xx.

15th.—The external wound completely healed."

Symptoms and Diagnosis.

The disease, of which this is a modified instance, has long been well known to the profession, and has formed the subject of many valuable essays. It consists of a general, tense, white, elastic, hot and painful enlargement or swelling occurring in one or other of the lower extremities, most frequently in the left. In three out of every five cases it is the left leg that is first or alone affected. This intumescence of the limbs is usually preceded by marked febrile symptoms; at least, in more than one-half of the cases of phlegmasia alba dolens which come before you, you will find that your patient has had pain and a rapid pulse, and all the

usual phenomena of fever before the swelling of the leg set in; and in many the disease only comes on after a previous regular attack of puerperal fever. But, on the other hand, you will meet with a few cases where there will be no apparent premonitory febrile symptoms, and the affection of the leg will be the first condition to attract your notice, and to alarm your patient. In some cases this swelling that I speak of begins high up in the extremity, at the upper part of the thigh, and then goes downwards; in others again, and more frequently, it appears, first of all, lower down, on the back of the foot or in the calf of the leg, and progresses upwards to the thigh. In one patient in the ward it was limited to the lower portion of the extremity, and in this respect was peculiar. Perhaps the symptom of the disease which is usually first complained of by the patient, is pain in the calf of the leg. There is in most cases no swelling at first until such pain has been felt; but after this has lasted for some time, the swelling begins, and goes on steadily increasing till the limb has become greatly enlarged (it may be) to double its normal size. The skin gets more and more distended, and becomes white and glistening (and hence the designation, *phlegmasia alba*); and this distension generally goes on to such a degree that at last the skin will scarcely pit on pressure. Indeed, this elasticity of the skin is one of the marks of distinction between this affection of the leg and ordinary anasarca; for in this last the skin readily receives and retains the impression of the finger. In nearly every case of *phlegmasia dolens* there is at first an increase in the temperature of the affected limb, sometimes to a very considerable degree. Then there is a loss of all muscular action in the limb, which lies stiff and motionless. While there is thus a decrease in the motory powers, amounting to a kind of semi-paralysis, there is an increase in its sensory power leading to pain, occasionally limited in locality and not severe in degree, but in other cases so great as to cause much suffering, and to render the disease in its truest sense a *phlegmasia dolens*. The affection is not always confined to the limits of a single limb; for not infrequently it attacks both legs simultaneously; or, after having shown itself for a time in the one, it may extend secondarily to the other also. Phenomena precisely resembling those that I have been attempting to describe, are occasionally met with in other parts of the bodies of puerperal patients. I have seen the disease attack one of the upper extremities and prove fatal. Much attention has been bestowed upon the condition of the lochial discharge in the case of patients affected with phleg-

masia dolens. In some instances the discharge has been found to be very foetid, and in many it ceases altogether when the disease sets in, or when it has become established; but occasionally no noticeable variation can be detected. Then, as regards constitutional symptoms, you will find that the pulse is rapid, and generally, at the same time, small and feeble; commonly the tongue is white and moist; the face presents a pale, chlorotic appearance; the urine is muddy, with an abundant deposit of lithates; and perspirations are apt to be frequent and profuse. The disease is not confined to females in the puerperal state, but has been found to occur in connection with various diseased conditions, as cancer of the uterus and mamma. I have seen it produced by the ligature of a uterine polypus, etc. In some rare instances it has been met with also in men, as after continued fever; after lithotomy; in cases of phthisis. When occurring in connection with parturition, the period of its attacks may be very various, as shown by the tables of Dr. Lee, who found that out of twenty-two cases the disease began in eight of them between the fourth and fourteenth day after the termination of labor, while in fourteen it did not set in till after the second week. The symptoms usually begin to abate in about ten days from the commencement of the disease; but they rarely disappear until after a fortnight, and in some cases they remain even for a longer period. Even after the essential phenomena of the disease have been dispelled, however, there may result various morbid conditions, such as tumefaction and debility of the limb, thickening or induration of the cellular tissue, and a varicose state of the superficial veins, which may retard the convalescence of the patient for an indefinite period. In many the affected limb remains weaker, and occasionally somewhat more swelled than the other limb for years, or even for life—the circulation through it never recovering its perfect freedom and force. In a case where both legs were affected, and probably the lower part of the vena cava obstructed, the patient told me that in bathing, the lower half of her body always became so discolored as to form a strong contrast with the upper half. In some rare cases gangrene of the limb has ensued; and you have an instance of a more common, but still rather rare complication in the case of the patient in the hospital, in whom an abscess formed in the leg, and gave rise to a long continued purulent discharge.

Pathological Anatomy and Pathology.

Passing over many points which have given rise to much discussion, not always of a very high practical import, let me just state briefly with regard to the pathological anatomy of phlegmasia dolens, that obstructive inflammation of the veins of the affected limb is one of the phenomena most constantly observed on post-mortem examination. In 1823 the late Dr. Davis, professor of midwifery in University college, London, published some cases in the Transactions of the Medico-Chirurgical Society, in which he had found the femoral and iliac veins impermeable, and filled with firm coagula of blood. Shortly afterwards, Bouillaud published some similar cases; and since then, Velpeau and others have frequently observed and recorded the occurrence of obstructions of those particular vessels. In 1829 Dr. Lee pointed out that the femoral and iliac veins were not the only vessels in which the obstruction and inflammation occurred, but that the venous inflammation commences in the uterine branches of the hypogastric veins, and subsequently spreads from them into the iliac and femoral trunks of the affected limb. Some cases have been observed, on the other hand, by Casper, Rigby, Fraser, Smeets, Jacquemier, and others, where in patients dying of phlegmasia dolens, no morbid change or obstruction could, it is averred, be detected in the femoral or other larger veins of the affected extremity. "Many authors of modern times," observes the late distinguished obstetrician, Professor Kiwisch, of Wurzburg, "have, as well as myself, found the veins perfectly healthy in cases of the most strongly marked phlegmasia dolens." Hamilton and Ramsbotham have paid particular attention to the swelling and inflammation of the lymphatic glands, which is not infrequently to be found in such cases, and to which they attributed the swelling of the limb, and most of the other symptoms; while Bouillaud and others have laid more special stress on an inflamed state of the lymphatic vessels as an essential anatomical condition of the disease. Dugés, again, averred that he had discovered the nerves of the affected limb to be altered and inflamed; Albers, Hankel and Seibold maintained that it was primarily a disease of the nerves of the extremity; and Dr. Burns published some cases as cases of puerperal neuritis, but more, perhaps, from the intense pain which attends the disease in some instances, than from any particular pathological change in the nervous cords. In many cases, at all events, where very great pain

has been experienced in the course of the disease, there has been no corresponding anatomical alteration of the nerves discovered after death.

Various opinions have been entertained at different times as to the pathological nature of phlegmasia dolens. It is unnecessary for me to do more than merely mention to you some of the principal hypotheses.

1. *Retention of the lochia.*—Mauriceau believed, that the disease depended on a suppression of the lochial discharge, and a subsequent determination of it to the affected limb.

2. *Metastasis of milk.*—In his first Memoir on Lacteal Deposits, Puzos ascribes all the phenomena observed in cases of phlegmasia alba, to a deposit of milk in the part; and Lévret, in referring to such cases, accepts and endorses the doctrine of Puzos, that the disease is essentially due to a metastasis of milk. This opinion was more commonly received than the former, and a supposed confirmation of it was derived from the fact, that when the limb was punctured a turbid serum was occasionally drawn off, which in some degree resembled milk; but on the other hand, the serous fluid which escapes is most frequently, perhaps, quite clear at first, and afterwards coagulates like the ordinary serum of the blood.

3. *Rupture of lymphatic vessels.*—In the beginning of this century Mr. Trye of Gloucester wrote an essay on the subject, in which he attempted to prove that the phenomena of the disease were all to be traced to a rupture of the lymphatic vessels at the brim of the pelvis, allowing of the escape of lymph into the cellular tissue, and its gravitation downwards into the limb.

4. *Obstruction of lymphatic vessels and glands.*—Dr. White, on the other hand, tried to show that the disease was due to an obstruction in the lymphatic vessels and glands, leading to an accumulation of the fluids below the obstructed part.

5. *Inflammation of lymphatic vessels and glands.*—According to a fifth theory, which numbered among its supporters such men as Ferrier, Gardien, Capuron, Hamilton, etc., phlegmasia dolens consists essentially of an inflammation of the lymphatic vessels and glands of the diseased limb.

6. *Phlebitis.*—I have already mentioned to you that Dr. Davis had pointed out the frequent occurrence of crural phlebitis in connection with this disease. The conclusion to which his observations led him was, that the obstruction of the principal vein of the limb was its essential phenomenon; and many eminent authorities have held the same doctrine, differing only in this—that some have maintained with Davis

that the phlegmasia was due to inflammation of the femoral veins, while Lee and others have held that the disease originated in the uterine and hypogastric vessels.

7. *Inflammation of all the tissues.*—Hull, Dewees and others, finding it difficult to account for the phenomena of the disease by the affection of any particular texture, came to regard it as an inflammation of all the textures of the limb. Lastly, seeing that no one of the local manifestations of the disease, nor all of them combined, sufficed to explain its nature and peculiarities, attempts have been made by some authors to trace the

Origin of Phlegmasia Dolens in Blood Disease.

In 1844 M. Bouchut first expressed the opinion that phlegmasia dolens was due not to a primary inflammation of the veins, but to a coagulation of blood in them resulting from some peculiar change in the quantity of the constituent elements of the blood, which rendered it specially liable to become coagulated. But it is to the observations and investigations of Dr. Mackenzie that we are indebted for the first distinct enunciation of the doctrine, that primarily phlegmasia dolens is a blood affection, and the confirmation of it by careful experiment and research. Indeed, Dr. Mackenzie's admirable essay on "The Pathology of Obstructive Phlebitis, and the Nature and Proximate Cause of Phlegmasia Dolens," is one of the best experimental monographs which we possess on any subject in obstetrics. In that essay he shows, first of all, from experiments on the lower animals, that while simple obstruction of the crural veins will readily produce, as has been long shown, a certain degree of œdema in the limb below the obstructed point, yet that it is not in itself sufficient to give rise to all the phenomena essential to a case of phlegmasia dolens. For the phenomena of that disease are not confined to the mere effusion of a serous fluid into the cellular tissue of the limb, such as may occur in any case of anasarca; but, as I have already told you, the œdema, which is much greater in degree than you ever find resulting from venous obstruction, is complicated with great tension, an exalted temperature of the diseased member, usually with increased sensibility and pain in it, and frequently also with more or less complete paralysis. Various experimenters have tied the femoral vein, and have succeeded in producing obliteration of it in many different ways, but without producing any of the peculiar phenomena of phlegmasia dolens. No increase in the

heat of the limb has resulted, and no tension, tenderness, or impaired mobility—nothing further than a slight degree of œdema, partial and passing.

Then, after showing that obstruction of the femoral vein by means of a ligature is not sufficient to produce phlegmasia dolens, Dr. Mackenzie goes on to prove that the excitement of inflammation in that vessel, and the production of coagula in it of some extent, are likewise incapable of producing the peculiar phenomena of that disease. In this set of experiments the veins were subjected, to a considerable extent, to the effects of a compressing agent, or had some hitherto unexplained changes set up in their walls by the introduction of pieces of bougie into their interior, or the application of a solution of nitrate of silver. Take the last of these morbid agencies as the means for making the experiment, and what results are obtained? The femoral vein is ligatured at a certain point, and an opening being made above it, a piece of lint steeped in a solution of nitrate of silver is applied to the whole interior of the veins to a certain distance. The blood is allowed to return immediately, and the opening in the vein closed up. The animal gets a little œdema of the limb—the usual result of venous obstruction, but it has none of the characteristic symptoms of phlegmasia dolens. After death, the vein is found to be filled throughout an extent corresponding exactly to the extent of surface to which the irritant had been applied, with a coagulum of blood, or rather with a mass of firm blood in the condition which, in his late able treatise on the pathology of the blood and blood vessels, my friend Dr. Wise has described as consolidated, from the circumstance that no separation has occurred between the serum and fibrine of the blood during the progress of this “consolidation;” but the whole commingled elements of the blood have contributed to the formation of this solid plug. This consolidated blood is in such a state as to show that the change had begun in it immediately after the application of the irritant; and yet that application was so rapid, and the blood was allowed to return so quickly, that there was no time for the development of inflammation in the walls of the vein, or, at all events, of such a degree of it as would account for this remarkable and sudden change in the blood. And, mark you, the experiments of Virchow, Meinel and others, all go to prove that the lining coat of the veins is incapable of undergoing any of the higher grades of the inflammatory process, or of giving out on its free surface any of the usual inflammatory products, such as coagulable lymph or pus, and that the

only changes of this kind, which it is capable of undergoing, are such as tend to its mortification and destruction. In the description which some obstetricians have given of false membranes and pus in the interior of the femoral and other veins in phlegmasia dolens, they have mistaken for these products, on the one hand, the sphacelated interior coat of the vessel, or the firmer layer of consolidated blood seen on the outer surface of the obstructing plug; and on the other hand, the broken down, decolorized and disintegrating blood seen in the interior of the plug, where the process of softening first commences, and which presents an appearance that might readily lead to its being mistaken for pus. When, then, in the lower animals obstruction is produced in the largest veins of a limb, either mechanically or chemically, and their cavity becomes filled up with clots of consolidated blood, a certain degree of œdema is produced in the limb below, but it never becomes the seat of over-distension, exalted temperature, or paralysis. In other words, obstructive phlebitis confined to the large vessels of a limb, does not suffice for the production of a phlegmasia alba dolens in that extremity.

The conclusions derived from experimental investigations are only further confirmed by the clinical observation of those rather rare cases where the larger veins of a limb have become the seat of a distinct degree of inflammation during life, and have been found after death to be filled up and occluded by a mass of consolidated blood. I show you a preparation of obstructed aorta and iliac and femoral arteries, which will give you some idea of the general appearance of these obstructing plugs of consolidated blood, and which was taken from a lady who had suffered for some time from obstructive disease at the orifice of the aorta, and in whom the aortic valves were found to have been covered with a mass of warty excrescences or vegetations. During the puerperal month, some of these excrescences had got loosened and detached from their seat, and being carried along in the circulating fluid, they passed through the aorta and became arrested and impacted, some of them in the femoral arteries, and others higher up in the iliac arteries and at the bifurcation of the aorta. In all of these vessels, but chiefly in the left femoral artery, they gave rise to the usual effects of such emboli, viz: first, to obstruction of the vessel and the formation of a coagulum to some distance, and secondly, to inflammatory changes in the arterial coats. But in this case the mischief went further, and the contiguous femoral vein became the seat of a secondary inflammation, in con-

sequence of which its walls were thickened and its calibre came to be obstructed with consolidated blood to the extent of two inches just below Poupart's ligament. Was there any symptom of phlegmasia dolens developed here? Not at all. There was nothing in the least degree approaching to phlegmasia dolens; and the patient's symptoms were carefully watched throughout by Dr. Moir and myself. Such a case proves distinctly that there may be a large coagulum in the principal vein of the limb, obstructing its course effectually and extensively, without giving rise to the phenomena of phlegmasia dolens, and that to produce this disease something more is necessary besides a simple crural phlebitis.

But, on the other hand, when means were taken, in the experiments made upon animals, to produce coagulation or consolidation of blood, not only in the largest veins of a limb, but also in a number of their branches of the third or fourth order of size as well, then something more than mere œdema resulted; for the heat, swelling, tension and paralysis characteristic of phlegmasia dolens, all became developed in a very marked degree. Consolidation of blood, then, in the whole plant of veins coalescing to form the tributaries of the femoral, gives rise to the development of phlegmasia alba dolens to an extent corresponding to the number of vessels in which the consolidation of blood has been effected. Observation of the effects of obliteration of the veins in the human subject leads to the same conclusion. As in the experiments on the lower animals, so in man, obstruction of the femoral vein alone does not suffice for, the production of phlegmasia dolens, while obstruction of a large number of its primary constituent branches is always attended by the development of phenomena precisely similar to, if not identical with those we regard as pathognomonic of phlegmasia dolens.

Still the question remained as to what it was that could lead to the consolidation of blood in the veins to the extent usually observed in this disease. To solve this question, Dr. Mackenzie, after having first shown that the extensive obstruction of the veins necessary for the development of the characteristic phenomena of phlegmasia dolens was not producible by merely local causes, such as injury or inflammation of these vessels; and that simple irritation of the lining membrane of the veins was alone sufficient for the production of such an amount of obstruction—after settling those two points, I say, Dr. Mackenzie proceeded to make another series of experiments in order to ascertain the effect of the

direct introduction of various irritating matters into the circulating fluid. Lactic acid was the agent, from the injection of which he obtained the most definite results; and by throwing some of this fluid in a dilute form into the femoral vein above a ligatured point, he found that coagulation of the blood was produced for a considerable distance towards the centre of the circulation, involving in some cases a considerable extent of the vena cava inferior, and producing a corresponding degree of obstruction in these vessels. When the animals, on which such experiments had been made, were killed at a sufficiently early period, however, it was found that the process of consolidation had begun in the surface of the column of blood in contact with the venous wall, and that it had not taken place simultaneously in the entire column within the vessel—thus showing that the action of the irritant had been primarily upon the interior of the vessel, and through this, secondarily, upon the blood. But the effect of the lactic acid was not confined to its action on those vessels with which it first came into contact. Its action upon the interior of the veins immediately above the point of its introduction was, of course, strongest and most direct, because it was applied to them nearly pure, and but slightly diluted by admixture with the blood, on which it seems to have exerted no immediate influence; and by the time that it arrived at the upper portion of the inferior cava (in the case of its injection into the femoral vein), the poison had become so diluted and dispersed through the mass of the circulating fluid, that its action on the vascular surfaces over which it passed was rendered impossible, from the rapidity with which it was hurried along through the heart and arteries in its now less concentrated condition. But the effects of the irritant reappeared so soon as it was carried to a point in the vascular system where the circulation was less rapid, and where it was thus allowed to remain for a longer period in contact with the interior of the vessels; and as the flow of the blood was necessarily retarded in the planet of veins contributing to the formation of those large vessels in which the first action of the poison in its undiluted form had led to the primary obstruction, it was precisely in these tributary veins that it was detained for a length of time sufficient to enable it, in its now diluted form, again to exert its irritating influence upon their inner wall, and so to lead to a second consolidation of the blood and obstruction of the vessels containing it. These secondary obstructions were not entirely confined, however, to the vessels behind those primarily obstructed; they were repeated at all points where

the circulation was weakened or retarded by other means, as, for example, by ligaturing of a vein. But in all cases where lactic acid was injected, let us say into the right femoral vein, and obstruction of the veins above was produced, obstruction was also found to have resulted in the smaller veins of the same thigh and leg to such an extent as to lead to the development in it of all the usual symptoms of phlegmasia dolens. I would beg here again to remark, that it seems essential for the production of this disease that obstruction should have taken place in a large number of series of the veins of minor size, more than in the leading or principal veins of the limb; and we can account for the occurrence of such cases as have been recorded by Casper, Smeets, Rigby, etc., who found the femoral vein itself to be sometimes free, by supposing that the obstruction had in these instances been confined to the smaller vessels, where its presence, however, would be readily overlooked. From all Dr. Mackenzie's observations and experiments, therefore, it seems probable that phlegmasia alba dolens is essentially due to the presence of a morbid material circulating in the blood, and exerting such an influence on the internal surface of the veins as leads to consolidation or coagulation of the blood which they contain. Whether or not that morbid matter be lactic acid, which Dr. Mackenzie has shown to be capable of producing all the phenomena of the disease when introduced into the blood artificially, and which he seems inclined to regard, in some cases, at least, as the possible cause of the disease, is a matter that remains for future chemical investigation to determine. Probably various morbid matters may be capable of leading to this effect. But there is this one fact to be noted in regard to the disease, and perhaps I ought to have called your attention to it previously, namely, this, that the blood of the puerperal female is in a condition which peculiarly predisposes it to coagulation within the blood vessels. There are two diseases in which this proneness of the blood to coagulation has been specially observed; and it is in patients affected with them that we most frequently meet with cases of endocarditis and of fibrinous deposits on the cardiac valves. These are rheumatism, and Bright's disease of the kidneys; and as in them so in the puerperal female, the blood is in the condition described as hyperinosis; that is, there is an increase in the quantity of fibrine in the blood, and a diminution in the number of red corpuscles. In the only instance which I know of on record, of the analysis of the blood in phlegmasia dolens, Becquerel and Rodier found the fibrine double

its natural quantity, and the blood corpuscles diminished. In the puerperal patient matters are rendered still more complicated, and the proclivity to disease still further increased by the circumstance that in her constitution great and important changes are at the time taking place, such as the degeneration and the resorption of the hypertrophied uterine mass, and the establishment of the new mammary secretion, in consequence of which the blood becomes loaded and deteriorated by the introduction of a quantity of effete organic material. In short, the blood is so altered as to render the patient peculiarly liable to spontaneous coagulation of blood in the blood vessels, or, as it has been called, thrombosis, and all its consequences. Among these consequences falls to be reckoned the disease which we have under discussion, and of which the peculiar phenomena become developed when the thrombosis occurs in a sufficiently large number of the minor veins of any part. But modern pathology teaches us that, in the first instance, at least, this venous coagulation, consolidation or thrombosis may arise without any previous inflammation of the veins, which at first are simply obstructed and occluded by the plug of consolidated blood; and if the external coats of the veins are found with evidences of inflammatory changes after death, these inflammatory changes may in general be correctly regarded as secondary phenomena, and the inflammation of the venous walls which led to them, as a secondary result produced by the irritation and pressure of the contained thrombosis, and by the changes which take place in the obstructing mass. So that, if this doctrine be true, phlegmasia dolens does not arise from phlebitis, properly so called, but is immediately due to obstruction of the veins by coagulated blood, and any resulting phlebitis is a secondary consequence only. This coagulation of the blood and obstruction of the veins may, in their turn, depend on one or other of two causes, viz: either, first, on some morbid alteration in the blood itself, tending to its consolidation or coagulation; or, second, on some morbid condition in the lining membrane of the veins, in virtue of which the relation between the blood vessels and the blood becomes disturbed, and coagulation of the latter is induced. I believe that in some cases of phlegmasia dolens this required morbid condition in the lining membrane of the veins may be primarily due to phlebitis, as where the veins of the uterus have been inflamed; and the inflammation having extended by continuity to the iliac vessels, has led to coagulation of blood in the veins below. But in the great majority of cases it seems to me that we

must look for the primary cause of the disease in some morbid condition of the circulating fluid, leading first of all, perhaps, to some peculiar change in the lining membrane of the veins, and through this, secondarily, to coagulation of the blood, occlusion of the vessels, and obstruction to the circulation in the limb.

II. *On Some Points in the Treatment and Clinical History of Asthma.* By HYDE SALTER, M. D., F. R. S., Assistant Physician to Charing Cross Hospital.

ONE of the commonest and best reputed remedies of asthma, one that is almost sure to have been tried in any case that may come under our observation, and one that in many cases is more efficacious than any other, is strong coffee. To the question, "Have you tried strong coffee?" the asthmatic is pretty sure to answer "Yes;" and he is also pretty sure to add that it gives him relief.

About the *modus operandi* of this remedy I was long puzzled; I could not make it out; and it is only lately that I think I have stumbled upon it. The rationale of its efficacy is, I think, to be found, on the one hand, in the physiological effects of coffee—the particular nervous condition that it produces—and, on the other, in a feature in the clinical history of asthma which I have long observed, and of which I think the efficacy of coffee is highly corroborative.

This fact is, that *sleep favors asthma*—that spasm of the bronchial tubes is more prone to occur during the insensibility and lethargy of sleep than during the waking hours, when the senses and the will are active. I have already referred to this in my observations on the "Clinical History of Asthma,"* in explaining why the paroxysm invariably (or almost invariably) chooses the hours of mid-sleep for its onset. Let me just refer to this subject again; for it is both interesting and important, as it explains a curious and very constant phenomenon in asthma—the hour, namely, of the attack—is highly illustrative of its pathology, and furnishes the key to some of its treatment.

I think, then, that sleep favors the development of asthma in two ways:

a. By producing insensibility to respiratory arrears.

* *Medico Chirurgical Review*, July 1858 and 1859.

b. By exalting reflex action.

The way in which sleep favors the development of asthma, by producing insensibility to respiratory arrears, and exalting reflex nervous action, I have already sufficiently explained in the papers on the Clinical History of Asthma, to which I have referred.

There can be no doubt that sleep *does* exalt reflex nervous action. It is a fact so abundantly inculcated by the history of disease, as hardly to require illustration or proof. The phenomena of epilepsy, cramp, lead tremors, and other examples of deranged muscular action, all teach it. It is just as sleep comes on, just as the will is laid to rest, or during sleep, that these different forms of involuntary muscular contraction most commonly occur. Any one, to convince himself of it, has only to fall asleep sitting on the edge of his chair, in such a position that it shall press on his sciatic nerves. As long as he is awake his legs will be motionless; but the moment he falls asleep they will start up with a plunge and suddenly wake him. As soon as he is awake they are quiet and still again, with no disposition to start, till he again falls asleep, and that moment they start again and wake him; and so he may go on as long as he likes. He changes his position, sits back in his chair, and they start no more. I need not explain what so clearly explains itself. I heard, some years ago, of a case of what might be called chronic traumatic tetanus, in which the source of irritation, the excito-motory stimulant—was extensive disease of the hip joint. The moment the patient fell asleep he was seized with opisthotonos, which, of course, immediately awoke him. On awakening, the tetanus vanished; on again falling asleep, it reappeared; and this alternation of falling asleep and waking continued for weeks, if not for months, the patient getting no continuous rest, till he was quite worn out. As long as he was broad awake the tetanus never appeared.* Hosts of similar facts, illustrative of the same truth, might be cited.

Any thing that exalts reflex nervous action increases, of course, the potency of reflex stimuli. Now, I have elsewhere endeavored to show that the phenomena of asthma are, in almost every case, those of excitomotory action, and that the exciting causes of asthma are, in the great majority of instances, such as act by a reflex circuit. They would,

* I was further informed, respecting this case, that, after every thing else had failed, sleep was procured, with an immunity from the tetanic spasms, by putting the patient into the mesmeric state. In this way he got rest, and greatly improved; but what was the ultimate issue of the case, I do not know.

therefore, on the asthmatic's falling asleep, immediately acquire a potency they did not before possess, just as the pressure on the sciatic nerve did, in the illustration I have given. Thus it is we see that the asthmatic may gorge himself with unwholesomes, and yet, as long as he keeps himself awake, suffer no consequential asthma. The irritant is there, the undigested food is in the stomach, but as long as he is awake, as long as the will is dominant, it is inadequate to the production of reflex phenomena. But let him fall asleep, and in an hour or two the paroxysm will be established.

And not only will *sound sleep* determine, by this exaltation of reflex susceptibility, the production of asthma by its exciting causes, but a small dose of the same condition—sleepiness, drowsiness—will favor the supervention of asthma in a proportionate degree. Not only is drowsiness a premonitory sign of an attack, but a powerful predisposer to it; and the asthmatic knows that he yields to it at his peril. I have often noticed in asthmatics, that the sleepiness that is so apt to come on after dinner will be accompanied by a slight asthmatic oppression and wheezing: as the drowsiness deepens, so does the asthma, and in this way it may settle down into an attack; but if the patient rouses himself, or if any thing occurs to engross his attention so as to wake him up, broad awake, the asthma quickly vanishes. It is in this way, I think, that is to be explained the fact, that asthmatics can dine out late and unwholesomely with impunity; while, if they dine at the same time and in the same way at home, asthma is sure to come on. At home they want that excitement which at a dinner party keeps the animal functions in a state of exaltation and the mind vividly awake, and effectually banishes the least approach to drowsiness. Of the fact there is not the slightest doubt. I know an asthmatic who can with impunity dine out at seven o'clock, as dinner eaters of the nineteenth century are apt to dine—shirk nothing from soup to coffee—walk home at ten o'clock, a distance perhaps of four miles, with the wind of a deer stalker—go straight to bed, and get up the next morning scathless; but if he were to dine at home at six, or even at five o'clock, he would be wheezing at nine, and by four the next morning downright asthmatic.

I believe a certain amount of the curative influence of fright, or other strong mental emotion, is to be explained in the same way.

"But why," it may be asked, "all this roundabout digression? What has all this to do with the curative influence of coffee?" I believe it is simply its explanation.

For, what are the physiological effects of coffee? They consist in the production of a state of mental activity and vivacity, of acuteness of perception and energy of volition, well known to those who have experienced it, and to a certain extent very pleasurable, and which is the very reverse of that abeyance of will and perception which, in drowsiness or sleep, so favors the development of asthma. In sleep, will and sense are suspended; after taking strong coffee, they are not only active, but exalted. It produces rapidity of thought, vivacity of spirits, clearness of apprehension, increases ten-fold the working powers, and altogether intensifies mental processes. Not only is there no disposition to sleep, but sleep is impossible; the thoughts hurry one another through the mind; the bodily movements are energetic and rapid; and if the effects of the drug are pushed far, a very unpleasant condition is produced, something like that of delirium tremens, minus its hallucinations. Now, if the suspension of the will, or its depression, favors the production of excito-motory phenomena, and thus favors the development of asthma, is it unreasonable to suppose that its exaltation should prevent or cure it? It *must* do so; if not positively, at least negatively, by removing the predisposing condition. And bearing in mind this marked physiological effect of coffee—that this exaltation of the animal nervous functions is exactly what it produces—it certainly does seem to me reasonable to suppose that this is its *modus operandi*. And if of coffee, then of strong tea, and alcohol, and ammonia, and ether, and other stimulants of undoubted value in asthma.

To show that this is the rationale of the cure of asthma by stimulants, I do not think it is necessary to show that it is only when the asthmatic is drowsy, or has been sleeping, that they do good. If any thing that rouses the asthmatic to a state of wakefulness will put a stop to asthma that was creeping on him while he was sleeping or sleepy, a fortiori, any thing that carries him beyond a state of mere wakefulness—that gives him an active, not a mere passive wakefulness—will be still more efficacious, and will be adequate to the checking of an attack that, in spite of his being broad awake, was gaining on him.

The very frequency with which coffee gives relief, makes it hardly worth while for me to narrate the history of any cases. I should think, from my own experience, that coffee relieves asthma in two-thirds of the cases in which it is tried. The relief is very unequal, often merely temporary, and sometimes very slight—sometimes it is complete and

permanent. It is often taken in the morning; and patients will tell you, that previous to taking their coffee they are not fit for any thing, can hardly move about; but that taking it is immediately followed by freedom of breathing, and an ability to enter at once on their daily occupations.

There are two or three practical hints with regard to the administration of coffee, that are worth bearing in mind.

1. It cannot be given too strong. Unless sufficiently strong to produce its characteristic physiological effects, it does no good, but rather harm; moreover, if given very strong, it need not be given in much bulk, and quantity is a disadvantage—its effect is less rapid, and it oppressively distends the stomach.

2. I think it is best given without sugar and milk—pure *café noir*.

3. It should be given on an empty stomach; if given on a full stomach it often does great harm, by putting a stop to the process of digestion: indeed, so much is this the case, that I consider coffee accompanying a meal, especially late in the day, so peculiarly apt to induce asthma, that it deserves to be classed among its special provocatives. I have mentioned elsewhere the case of an individual who never dared to take the usual after-dinner cup of coffee—it would make the simplest dinner disagree with him. But the same asthmatic found in strong coffee, on an *empty stomach*, one of his most valuable remedies.*

4. For some reason or other, I don't know why, it seems to act better if given hot—very hot.

I adverted just now to the influence of mental emotion on asthma, and stated my belief that its *modus operandi* was, like that of coffee and other stimulants, by producing an exaltation of sense and will—an intense activity of the intel-

* Since writing the above I have received the following account, from an asthmatic gentleman, singularly confirmatory of my own observations:

"I used to think," writes my informant, "strong coffee the best of all remedies. I remember one instance especially, only a pattern of many others, but more striking when told. With bent back, high shoulders, and elbows fixed on the chair-arms, I had been laboring for breath all the afternoon. About five o'clock I had two breakfast cups of strong coffee. The hard breathing disappeared rapidly and completely. My sisters were dancing in the next room, and in less than an hour I was dancing with them, quite free from asthma.

"Of late, coffee has often had an opposite effect upon me. The after dinner cup of coffee, to which I have been for several years habituated, now produces a sensation of stuffing of the chest, and incapacity of moving about. I believe this is because it stops digestion; and the reason I did not suffer for some years, I take to be, that my originally most excellent and enduring stomach could stand it so long, and no longer. Coffee, on an empty stomach, I still deem a most valuable remedy. I do not share the prejudice against putting milk and sugar into coffee that is used as a medicine, provided that it remain *café noir*, and be not made *café au lait*."

lectual part of nervous action—and proportionately lessening the tendency to excito-motion; and this it does to a much greater degree than stimulant remedies, and its effects are, therefore, proportionately more sudden and complete. It was, indeed, the curative influence of violent emotion, and the observation that it and coffee-taking alike banish that condition in which asthma is most prone to come on, that first suggested to my mind the theory of the action of stimulants on asthma that I have just endeavored to propound. I think, too, that mental emotion acts, if I may so express it, as a nervous derivative. There are many phenomena, both in health and disease, that seem to show that only a certain amount of nervous activity can be in operation at a certain time; and that if a nervous action of one kind comes into operation, another that had been previously going on is immediately depressed or arrested. Such is the explanation of the well known experiment of the two dogs, one of which was taken hunting immediately after a meal, while the other was allowed to sleep. In the one that was taken hunting, digestion, on its return, was found hardly commenced; in the other, it was completely over, and the stomach empty. In the sleeping dog the whole vital dynamics, not being otherwise employed, were appropriated by the function of digestion; while in the hunted dog they were entirely taken up by its energetic locomotion, and drafted away, as it were, from that nervous superintendence of digestion without which the function cannot be carried on.* The power of strong emotion, or hard study, in retarding digestion, is an analogous fact. Just in the same way, I think, the extraordinary activity and exaltation of thought and perception, that characterize the state of mind that the taking of coffee, ether and other stimulants produces, acts as a nervous derivative in asthma, and diverts from the nervous system of the lungs that morbid activity which engenders the spasm of the bronchial tubes.

The cure of asthma by violent emotion is more sudden and complete than by any other remedy whatever; indeed, I know few things more striking and curious in the whole history of therapeutics. The remedy that stands next in speed and efficacy—tobacco pushed to collapse—takes time, a few minutes at least: but the cure of asthma by sudden alarm takes *no* time; it is instantaneous—the intensest paroxysm ceases on the instant. This is a fact so little known, as far as I can see, and yet so practically important and

* See Dr. John Reid's experiments, in Todd's *Cyclopædia of Anatomy*, vol. iii., p. 899; also those of Bernard and Bischoff, in Müller's *Archiv*. 1843.

theoretically interesting, that I think it will not be unprofitable if I endeavor to impress it more deeply by the narration of some cases of its occurrence.

CASE I.—A gentlemen suffering an unusually severe attack, so bad that he had been unable to speak or move all day, was suddenly alarmed by the illness of a relative. He ran down two flights of stairs and up again, and administered the restoratives he had procured, and then observed, to his astonishment, his asthma was gone. This gentleman tells me, that on many other occasions different forms of mental emotion have cured his asthma.

CASE II.—C. R., a confirmed asthmatic, states that, when he was suffering from an unusually severe attack, a fire occurred just opposite his house. Previous to the occurrence of the fire he was in bed, breathing with the greatest difficulty, and unable to move. When the excitement of the fire was over, he found that he had been standing in his night shirt, looking, with the rest, out of the window, and that he had quite forgotten all about his asthma. His breath was not quite well the rest of the day, but nearly. On another occasion, when he was suffering from an attack, some sudden anxiety arose about two of the members of his family being out late. The alarm from which he suffered relieved his asthma, but not so suddenly as in the case of the fire. On another occasion, a sister of his was seized with sudden illness that seemed to threaten suffocation. He was suffering severely from asthma at the time, and was in bed. He jumped out of bed in great alarm, and found then that his asthma was perfectly cured. He was sufficiently well to run for a doctor, and continued well throughout the day.

CASE III.—Not long ago I was informed by a patient at the hospital, who had suffered greatly for many years, that however severe an attack might be, venereal excitement would almost invariably cure it. He told me also, that when a youth he had been guilty of the practice of onanism, and that the unnatural excitement thereby produced had just the same curative effect on his asthma. Indeed, he pleaded this effect of it as a sort of excuse for the practice; and assured me that when his breath was very bad at night he used to resort to it for the purpose of curing it.

I have known two or three cases in which sexual excitement has had just the same effect.

CASE IV.—The following account of the curative influence of mental excitement I have received from a medical friend, who has suffered from asthma all his life:

“On one occasion I was sitting with fixed elbows on a sofa, breathing hard: a lady came into the room whom I had known very well, and whom I had not seen for several years. I got up to receive her, and sat down again on a music-stool; with no especial purchase, therefore, for the respiratory muscles, and yet with comparative ease of breathing. This ease lasted for about an hour, and then the difficulty of breathing came on again. I attribute the temporary amendment to the diversion of nervous energy. Just the same thing has happened to me more than once. On another occasion I was suffering a good deal at a farm house. I got on horseback with some difficulty and an anxious hope that the horse would go quietly, to fetch myself an emetic from a town three miles off. The horse ran away with me. I pulled in, at first weakly and almost despairingly, but the need of exertion brought the power. After a run of about a mile I succeeded in pulling up, and was delighted to find my asthma gone. Another time I was breathing very hard, and a friend engaged me in an argument. At first I could only get out a sentence in successive gasps; but gradually, as I got excited, the hard breathing went off, and I could talk fluently.”*

From the foregoing observations, then, I think we may conclude:

That, since the abeyance of the will favors, in proportion to the degree of that abeyance, the development of asthma, and since the effect of strong coffee is to dispel such suspension or depression of volition, and restore the will to its wonted (or even an unwonted) activity, it is by thus exalting the will, and so disfavoring the development of excitomotor action, that this remedy relieves asthma.

That the same interpretation applies to the relief of asthma by all other stimulants whatever.

That thus strong coffee and mental excitement, although apparently so different, belong to the same category of remedies for asthma.

* For additional cases of the cure of asthma by mental emotion, I must refer the reader to a paper on the Pathology of Asthma, in the British and Foreign Medico-Chirurgical Review, for July 1858.

III. *Summary of the Succession in Time and Geographical Distribution of Recent and Fossil Mammalia.* By RICHARD OWEN, F. R. S., Fullerian Professor of Physiology, etc.

HAVING recounted the chief steps which have been made in the restoration of the extinct quadrupeds of Australia, I conclude the physiological deductions from this class of organic phenomena, and the selection of topics, which seemed to me to be best adapted for the present Fullerian course. In the discourse of to-day, as in the preceding one on South American extinct mammals, you could not fail to be struck with the forcible and cumulative evidence which they supplied in proof of the law that with extinct as with existing mammalia, particular forms were assigned to particular provinces, and that the same forms were restricted to the same provinces at a former geological period as they are at the present day. That period, however, was the more recent tertiary one.

In carrying back the retrospective comparison of existing and extinct mammals to those of the eocene and oolitic strata, in relation to their local distribution, we obtain indications of extensive changes in the relative position of sea and land during those epochs, through the degree of incongruity between the generic forms of the mammalia which then existed in Europe, and any that actually exist on the great natural continent of which Europe now forms part. It would seem, indeed, that the further we penetrate into time for the recovery of extinct mammalia, the further we must go into space to find their existing analogues. To match the eocene palæotheres and lophiodons we must bring tapirs from Sumatra or South America; and we must travel to the Antipodes for myrmecobians, the nearest living analogue to the amphitheres and spalacotheres of our oolitic strata.

On the problem of the extinction of species I have little to say; and of the more mysterious subject of their coming into being, nothing profitable or to the purpose, at present. As a cause of extinction in times anterior to man, it is most reasonable to assign the chief weight to those gradual changes in the conditions affecting a due supply of sustenance to animals in a state of nature which must have accompanied the slow alternations of land and sea brought about in the æons of geological time. Yet this reasoning is applicable only to land animals; for it is scarcely conceivable that such operations can have affected sea fishes.

There are characters in land animals rendering them more

obnoxious to extirpating influences, which may explain why so many of the larger species of particular groups have become extinct, while smaller species of equal antiquity have survived. In proportion to its bulk is the difficulty of the contest which the animal has to maintain against the surrounding agencies that are ever tending to dissolve the vital bond, and subjugate the living matter to the ordinary chemical and physical forces. Any changes, therefore, in such external agencies as a species may have been originally adapted to exist in, will militate against that existence in a degree proportionate to the size which may characterize the species. If a dry season be gradually prolonged, the large mammal will suffer from the drought sooner than the small one; if such alteration of climate affect the quantity of vegetable food, the bulky herbivore will first feel the effects of stinted nourishment; if new enemies be introduced, the large and conspicuous animal will fall a prey while the smaller kinds conceal themselves and escape. Small quadrupeds, moreover, are more prolific than large ones. Those of the bulk of the mastodons, megatheria, glyptodons, and diprotodons, are uniparous. The actual presence, therefore, of small species of animals in countries where larger species of the same natural families formerly existed, is not the consequence of degeneration—of any gradual diminution of the size of such species, but is the result of circumstances which may be illustrated by the fable of the “Oak and the Reed;” the smaller and feebler animals have bent and accommodated themselves to changes to which the larger species have succumbed.

That species should become extinct, appears, from the abundant evidence of the fact of extinction, to be a law of their existence; whether, however, it be inherent in their own nature, or be relative and dependent on inevitable changes in the conditions and theatre of their existence, is the main subject for consideration. But admitting extinction as a natural law which has operated from the beginning of life on this planet, it might be expected that some evidence of it should occur in our own time, or within the historical period. Reference has been made to several instances of the extirpation of species, certainly, probably or possibly due to the direct agency of man; but this cause avails not in the question of the extinction of species at periods prior to any evidence of human existence—it does not help us in the explanation of the majority of extinctions, as of the races of aquatic invertebrata and vertebrata which have successively passed away.

Within the last century academicians of St. Petersburg and good naturalists have described and given figures of the bony and the perishable parts, including the alimentary canal of a large and peculiar fucivorous sirenian—an amphibious animal like the manatee, which Cuvier classified with his herbivorous cetacea, and called *stelleria*, after its discoverer. This animal inhabited the Siberian shores and the mouths of the great rivers there disemboguing. It is now believed to be extinct, and this extinction seems not to have been due to any special quest and persecution by man. We may discern, in this fact, the operation of changes in physical geography which have, at length, so affected the conditions of existence of the *stelleria* as to have caused its extinction. Such changes had operated, at an earlier period, to the extinction of the Siberian elephant and rhinoceros of the same regions and latitudes. A future generation of zoologists may have to record the final disappearance of the Arctic buffalo (*ovibos moschatus*). Fossil remains of *ovibos* and *stelleria* show that they were contemporaries of *elephas primigenius* and *rhinoceros tichorhinus*.

The great auk (*alca impennis*, L.) seems to be rapidly verging to extinction. It has not been specially hunted down like the dodo and *dinornis*, but by degrees has become more scarce. Some of the geological changes affecting circumstances favorable to the well being of the *alca impennis*, have been matters of observation. A friend,* who last year visited Iceland, informs me that the last great auks, known with any thing like certainty to have been there seen, were two which were taken in 1844 during a visit made to the high rock called "Eldey," or "Meelsoekten," lying off Cape Reykianes, the S. W. point of Iceland. This is one of three principal rocky islets formerly existing in that direction, of which the one, specially named from this rare bird, "geir-fugla sker," sank to the level of the surface of the sea during a volcanic disturbance in or about the year 1830. Such disappearance of the fit and favorable breeding-places of the *alca impennis* must form an important element in its decline towards extinction. The numbers of the bones of *alca impennis* on the shores of Iceland, Greenland and Denmark, attest the abundance of the bird in former times. A consideration of such instances of modern partial or total extinctions may best throw light on, and suggest the truest notions of the causes of ancient extinctions.

As to the successions or coming in of new species, one

*John Wolley, Jr. Esq. F. Z. S.

might speculate on the gradual modifiability of the individual—on the tendency of certain varieties to survive local changes, and thus progressively diverge from an older type; on the production and fertility of monstrous offspring; on the possibility, e. g. of a variety of auk being occasionally hatched with a somewhat longer winglet, and a dwarfed stature; on the probability of such a variety better adapting itself to the changing climate or other conditions than the old type—of such an origin of *alca torda*, e. g.—but to what purpose? Past experience of the chance aims of human fancy, unchecked and unguided by observed facts, shows how widely they have ever glanced away from the gold centre of truth.

Upon the sum of the evidence, which, in the present course I have had the honor to submit to you, I have affirmed that the successive extinction of amphitheria, spalacotheria, triconodons, and other mesozoic forms of mammals, has been followed by the introduction of much more numerous, varied, and higher organized forms of the class during the tertiary periods.

There are, however, geologists who maintain that this is an assumption, based upon a partial knowledge of the facts. Mere negative evidence, they allege, can never satisfactorily establish the proposition that the mammalian class is of late introduction, nor prevent the conjecture that it may have been as richly represented in secondary as in tertiary times, could we but get evidence of the terrestrial fauna of the oolitic continent. To this objection I have to reply: in the palæozoic strata, which, from their extent and depth, indicate, in the earth's existence as a seat of organic life, a period as prolonged as that which has followed their deposition, no trace of mammals has been observed. It may be conceded that, were mammals peculiar to dry land, such negative evidence would weigh little in producing conviction of their non-existence during the silurian and devonian æons, because the explored parts of such strata have been deposited from an ocean, and the chance of finding a terrestrial and air-breathing creature's remains in oceanic deposits is very remote. But, in the present state of the warm-blooded, air-breathing, viviparous class, no genera and species are represented by such numerous and widely-dispersed individuals, as those of the order cetacea, which, under the guise of fishes, dwell, and can only live in the ocean.

In all cetacea the skeleton is well ossified, and the vertebræ are very numerous: the smallest cetaceans would be deemed large amongst land mammals; the largest surpass

in bulk any creatures of which we have yet gained cognizance: the hugest ichthyosaur, iguanodon, megalosaur, mammoth, or megathere, is a dwarf in comparison with the modern whale of a hundred feet in length.

During the period in which we have proof that cetacea have existed, the evidence in the shape of bones and teeth, which latter enduring characteristics in most of the species are peculiar for their great number in the same individual, must have been abundantly deposited at the bottom of the sea; and as cachalots, grampuses, dolphins and porpoises are seen gamboling in shoals in deep oceans, far from land, their remains will form the most characteristic evidences of vertebrate life in the strata now in course of formation at the bottom of such oceans. Accordingly, it consists with the known characteristics of the cetacean class to find the marine deposits which fell from seas tenanted, as now, with vertebrates of that high grade, containing the fossil evidences of the order in vast abundance.

The red crag of our eastern counties contains petrified fragments of the skeletons and teeth of various cetacea, in such quantities as to constitute a great part of that source of phosphate of lime for which the red crag is worked for the manufacture of artificial manure. The scanty evidence of cetacea in cretaceous beds seems to indicate a similar period for their beginning as for the soft-scaled cycloid and ctenoid fishes which have superseded the ganoid orders of mesozoic times.

We cannot doubt but that had the genera ichthyosaurus, pliosaurus or plesiosaurus, been represented by species in the same ocean that was tempested by the balænodons and dioplodons of the miocene age, the bones and teeth of those marine reptiles would have testified to their existence as abundantly as they do at a previous epoch in the earth's history. But no fossil relic of an enaliosaur has been found in tertiary strata, and no living enaliosaur has been detected in the present seas: and they are consequently held by competent naturalists to be extinct.

In like manner does such negative evidence weigh with me in proof of the non-existence of marine mammals in the liassic and oolitic times. In the marine deposits of those secondary or mesozoic epochs, the evidence of vertebrates governing the ocean, and preying on inferior marine vertebrates is as abundant as that of air-breathing vertebrates in the tertiary strata; but in the one the fossils are exclusively of the cold-blooded reptilian class, in the other of the warm-blooded mammalian class. The enaliosauria, cetiosauria,

and crocodilia played the same part and fulfilled similar offices in the seas from which the lias and oolites were precipitated, as the delphinidæ and balænidæ did in the tertiary, and still do in the present seas. The unbiassed conclusion from both negative and positive evidence in this matter is, that the cetacea succeeded and superseded the enaliosauria. To the mind that will not accept such conclusion, the stratified oolitic rocks must cease to be monuments or trustworthy records of the condition of life on the earth at that period.

So far, however, as any general conclusion can be deduced from the large sum of evidence above referred to, and contrasted, it is against the doctrine of the Uniformitarian. Organic remains, traced from their earliest known graves, are succeeded, one series by another, to the present period, and never reappear when once lost sight of in the ascending search. As well might we expect a living ichthyosaur in the Pacific, as a fossil whale in the Lias: the rule governs as strongly in the retrospect as the prospect. And not only as respects the vertebrata, but the sum of the animal species at each successive geological period has been distinct and peculiar to such period.

Not that the extinction of such forms or species was sudden or simultaneous: the evidences so interpreted have been but local: over the wider field of life at any given epoch, the change has been gradual; and, as it would seem, obedient to some general, but as yet, ill comprehended law. In regard to animal life, and its assigned work on this planet, there has, however, plainly been an ascent and progress in the main.

Although the mammalia, in regard to the plenary development of the characteristic orders, belong to the tertiary division of geological time, just as "echini are most common in the superior strata; ammonites in those beneath, and producti with numerous encrini in the lowest"* of the secondary strata, yet the beginnings of the class manifest themselves in the formations of the earlier preceding division of geological time.

No one, save a prepossessed Uniformitarian, would infer from the lucina of the permian, and the opis of the trias, that the lamellibranchiate mollusks existed in the same rich variety of development at these periods as during the tertiary and present times; and no prepossession can close the

* A generalization of William Smith's, justly regarded by Edward Forbes and other philosophical naturalists as of higher importance than the identification of strata by species.

eyes to the fact that the lamellibranchiate have superseded the palliobranchiate bivalves.

On negative evidence *orthisina*, *theca*, *producta*, or *spirifer* are believed not to exist in the present seas; neither are the existing genera of siphonated bivalves and univalves deemed to have abounded in permian, triassic or oolitic times. To suspect that they may have then existed, but have hitherto escaped observation, because certain lamellibranchs with an open mantle, and some holostomatous and asiphonate gastropods, have left their remains in secondary strata, is not more reasonable, as it seems to me, than to conclude that the proportion of mammalian life may have been as great in secondary as in tertiary strata, because a few small forms of the lowest orders have made their appearance in triassic and oolitic beds.

Turning from a retrospect into past time to the prospect of time to come—and I have received more than one enquiry into the amount of prophetic insight imparted by palæontology—I may crave indulgence for a few words of more sound, perhaps, than significance. But the reflective mind cannot evade or resist the tendency to speculate on the future course and ultimate fate of vital phenomena in this planet. There seems to have been a time when life was not; there may, therefore, be a period when it will cease to be.

Our most soaring speculations still show a kinship to our nature: we see the element of finality in so much that we have cognizance of, that it must needs mingle with our thoughts, and bias our conclusions on many things.

The end of the world has been presented to man's mind under divers aspects: as a general conflagration; as the same, preceded by a millennial exaltation of the world to a paradisiacal state—the abode of a higher and blessed race of intelligences,

If the guide post of palæontology may seem to point to a course ascending to the condition of the latter speculation, it points but a very short way; and in leaving it we find ourselves in a wilderness of conjecture, where to try to advance is to find ourselves “in wandering mazes lost.”

With much more satisfaction do I return to the legitimate deductions from the phenomena we have had under review.

In the survey which I have taken in the present course of lectures of the genesis, succession, geographical distribution, affinities and osteology of the mammalian class, if I have succeeded in demonstrating the perfect adaptation of

each varying form to the exigencies, and habits and well-being of the species, I have fulfilled one object which I had in view, viz: to set forth the beneficence and intelligence of the creative power.

If I have been able to demonstrate a uniform plan pervading the osteological structure of so many diversified animated beings, I must have enforced, were that necessary, as strong a conviction of the unity of the creative cause.

If, in all the striking changes of form and proportion which have passed under review, we could discern only the results of minor modifications of the same few osseous elements, surely we must be the more strikingly impressed with the wisdom and power of that cause which could produce so much variety, and at the same time such perfect adaptations and endowments, out of means so simple.

For, in what have those mechanical instruments,—the hands of the ape, the hoofs of the horse, the fins of the whale, the trowels of the mole, the wings of the bat,—so variously formed to obey the behests of volition in denizens of different elements—in what, I say, have they differed from the artificial instruments which we ourselves plan with foresight and calculation for analogous uses, save in their greater complexity, in their perfection, and in the unity and simplicity of the elements which are modified to constitute these several locomotive organs.

Every where in organic nature we see the means not only subservient to an end, but that end accomplished by the simplest means. Hence we are compelled to regard the great cause of all, not like certain philosophic ancients, as a uniform and quiescent mind, as an all pervading anima mundi, but as an active and anticipating intelligence.

By applying the laws of comparative anatomy to the relics of extinct races of animals contained in and characterizing the different strata of the earth's crust, and corresponding with as many epochs in the earth's history, we make an important step in advance of all preceding philosophies, and are able to demonstrate that the same pervading, active and beneficent intelligence which manifests his power in our times, has also manifested his power in times long anterior to the records of our existence.

But we likewise, by these investigations, gain a still more important truth, viz: that the phenomena of the world do not succeed each other with the mechanical sameness attributed to them in the cycles of the epicurean philosophy; for we are able to demonstrate that the different epochs of the history of the earth were attended with corresponding

changes of organic structure; and that, in all these instances of change, the organs, as far as we could comprehend their use, were exactly those best suited to the functions of the being. Hence we not only show intelligence evoking means adapted to the end; but, at successive times and periods, producing a change of mechanisms adapted to a change in external conditions. Thus, the highest generalizations in the science of organic bodies, like the Newtonian laws of universal matter, lead to the unequivocal conviction of a great first cause, which is certainly not mechanical.

Unfettered by narrow restrictions,—unchecked by the timid and unworthy fears of mistrustful minds, clinging, in regard to mere physical questions, to beliefs, for which the author of all truth has been pleased to substitute knowledge,—our science becomes connected with the loftiest of moral speculations; and I know of no topic more fitting to the sentiments with which I desire to conclude the present course.

If I believed, to use the language of a gifted contemporary, that the imagination, the feelings, the active intellectual powers, bearing on the business of life, and the highest capacities of our nature, were blunted and impaired by the study of physiological and palæontological phenomena, I should then regard our science as little better than a moral sepulchre, in which, like the strong man, we were burying ourselves and those around us in ruins of our own creating. But surely we must all believe too firmly in the immutable attributes of that being, in whom all truth, of whatever kind, finds its proper resting place, to think that the principles of physical and moral truth can ever be in lasting collision.*

* Sedgwick, Address to the Geological Society, 1831.

CHRONICLE OF MEDICAL SCIENCE.

PHYSIOLOGY AND PATHOLOGY.

1. *Thymus Gland.*

M. Friedelben shows in his work on the thymus gland :

1. That this organ may be removed without injury to the general health of the animal.

2. That animals deprived of their thymus take a larger quantity of food than natural.

3. That the increase of the body of animals operated on is absolutely greater than that of animals in a normal state, but that relatively to the quantity of food taken the growth is less.

4. The sanguification of blood in them is more rapid ; the blood is richer in albumen and water ; the number of globules of the blood is absolutely greater, but that of the red globules absolutely less ; the excretion of albuminous matters is increased, of carbonic acid lessened ; the excretion of water by the skin greater, by the kidneys less.

5. The growth and chemical constitution of the bones are also affected by the extirpation of the thymus. The pathological deductions from his physiological researches are : 1st. That the thymus, neither in its normal nor in its hypertrophied state, undergoes turgescence, excepting after the taking of food ; and that the pretended hyperæmic and periodical turgescence does not really exist. 2d. That the organ never interferes with the respiration or the circulation, either in its normal or in its hypertrophied state, nor compresses the respiratory nerves ; and 3d. That in neither state, therefore, does it interfere with the cerebral circulation, or the innervation of the nerves of the glottis.

2. *On the Blood Globules of Animals, &c.* By BROWN-SÉQUARD.

This physiologist has observed, on examining by the microscope the blood of the dog, cat or rabbit, even a single

hour after injection therein of the blood of the bird, that none of the oval large globules are to be met with; and if examined some days, or even several hours after, none whatever are to be seen in any organ of the body where it might be supposed that they had been arrested. The blood, however, of such an animal, if examined a quarter of an hour after the injection of the bird's blood, will be found to contain oval globules in the veins of all the organs. Thus it appears that all the capillaries of the body are permeable by and do not arrest these large oval globules. But, even for the space of a month after injecting the blood of the dog, rabbit, guinea-pig, &c. into the circulation of the bird, some of the circular discs are to be seen within it when examined by the microscope. In the case of the cock, into whose veins dog's blood has been transfused, on the following day as many round as oval globules are to be seen; but in a few days the circular globules have become much fewer, and three weeks after, only two or three are to be seen in proportion to a thousand of the oval ones.

3. *Modus Operandi of Chloroform.*

Dr. F. Piossek read before the Physiological society of Greisswald an account of experiments with chloroform, made under the direction of Prof. Hunefeld, which seem to establish the following conclusions as to the *modus operandi* of chloroform, beyond a doubt:

Chloroform produces anæsthesia by abstracting from the blood some of the oxygen necessary to the continuance of the organic processes, thus causing impaired nutrition of the central organs and nerves; hence the insensibility of the sensory, and the relaxation of the motory nerves.

The oxygen of the blood probably combines with the carbon (liberated by the decomposition of the chloroform) to form carbonic acid, while the chlorine and water of the chloroform probably form hydrochloric acid, etc. Into what combinations this hydrochloric acid may then enter with the ingredients of the blood, is as yet unknown.

The other anæsthetics (ether, amylene, etc.) act similarly, and their *modus operandi* may be compared to the narcotizing or asphyxiating action of carbonic acid on nitrous oxide.

Med. and Surg. Reporter.

4. *The Diagnosis of Melanotic Cancer by the Urine.* By Dr. EISELT. (Vierteljahrsschrift für die practische Heilkunde, xv. Jahrgang, 1858, Dritter Band.)

Dr. Eiselt reports three cases which appear to show that the urine offers a means of diagnosis in melanotic cancer. The first is that of a man, aged sixty, who, in 1856, came under observation, with symptoms of hepatic cancer, and with cancer of the left eye. There was no icterus, but the urine exhibited a remarkable peculiarity; when passed, it was perfectly clear; but on standing, it became as dark as porter, without losing its transparency. A portion was drawn by the catheter; it was found to contain copious uric acid, and a normal quantity of urea; when exposed to air and light, it became dark in a few hours; but concentrated nitric acid caused the change instantly; other oxidizing substances, especially chromic acid, produced the same effect; and the black matter was regarded as melanin, which induced the opinion, that the cancer was melanotic, a diagnosis confirmed by the autopsy. A year later, a man, aged sixty-eight, was admitted into the Prague Hospital, with cutaneous melanotic cancer. The urine, at first, exhibited the peculiarity shown in the last case feebly; but as the disease spread to the internal organs, and especially as the liver became affected, the reaction of the urine became as characteristic as in the former case. A third case occurred in May 1858, in which there was hepatic cancer, and cancer of one eye. The urine again induced the attending physician to diagnose melanotic cancer; some urine of May 8th was closed hermetically, and kept in the dark; some that was passed on May 9th, was also closed hermetically, and placed in the shade. On May 25th Dr. Eiselt exhibited both specimens to the College of physicians of Prague; the urine of May 8th was slightly turbid, pale yellow, and had deposited phosphates; the urine of May 9th was black with reflected, and dark brown with transmitted light. On opening the first specimen, nitric acid and chromic acid at once induced the black color. The autopsy confirmed the diagnosis of melanotic cancer, for which there had been no other indication.

5. *Multilocular Ulcerating Echinococcus Tumors of the Liver.*

Dr. Schiess of St. Gallen, describes a tumor of this nature associated with enlarged spleen removed from the body of a woman, aged fifty-nine, who had been the subject of jaundice, itching of the skin, ascites, &c. In the middle part of the liver, the right lobe of which was atrophied and cirrhotic, existed a whitish knotted and raised mass, the most prominent part of which consisted of fluctuating projections of the size of an egg, covered by thickened peritoneum, and rendered uneven by numerous small yellowish transparent bodies of the size of hemp seed. On making a section of this, a quantity of thin greenish yellow and turbid fluid gushed forth from large hollow cavities lined by a thick membrane, and evidently consisting of dilated bile ducts.

The small elevations crunched under the knife, and contained partly a granular material capable of being turned out in cylindrical masses.

On complete division with the scalpel, behind the cavernous substance before described, a large mass was brought to view, of the size of a child's head, in part limited by the cavernous substance and in part by peritoneum merely. Inwards existed a thick areolar tissue stroma, in which were insulated portions of liver substance, and in which many large and small cavities were seen, with distinct lining membranes, and filled with a brawn-like transparent substance. Still deeper a hard stroma existed, in which the above named cavities were, but the brawny masses became less numerous deeper down. Beyond this the stroma was found of a yellowish color, softened, and broken down, with here and there calcareous spots. In the centre it was so soft that it might be compared to rotten pumpkin. On microscopical examination of a section of the hindermost mass before described, a number of small, partly isolated, partly accumulated echinococcus vesicles with their characteristic laminations were brought to view, the smallest showing dark granular contents, with calcareous corpuscles. In one of the larger ones the remains of the animal were found as an oval body, surrounded by a structureless membrane, closely beset by a brownish red granular pigment. In this the hooklets so well known were seen. As to the stroma, the outer part of the tumor consisted of a structure possessed of the characters of normal areolar tissue with its anastomosing cells: more inwards, where the breaking down began, a fatty and calcareous metamorphosis was seen, commencing in the

areolar-tissue corpuscles, and surrounding the echinococci as centres of calcification, the transparent vesicles thus contrasting with the neighboring dark spots.

The above case is considered by the author as supportive of the view held by Virchow, that sterile echinococci vesicles may exist. He concludes by allusion to the similar cases already published, as by Virchow, Kuhl, Luschka and Heschl, &c.

6. *Remarkable Case of Obesity in a Hindoo Boy aged twelve years.* By W. G. DON, M. D., Assistant Surgeon, H. M. 28th Regiment. (Lancet.)

A Hindoo boy, known in the streets of Bombay under the soubriquet of the "fat boy," has lately attracted considerable notice in Bombay; and as his case is a very remarkable example of perverted nutrition, I shall give a few particulars regarding him.

Shakarm, a Mahratta, aged twelve years, was born at Malwan, a village in the Concan, near Goa. His father and mother both died several years ago, and he is now a beggar, living on the bounty of the many charitable citizens of Bombay. In his second year he became very fat, and the obesity has increased with his growth, year by year, till his whole body is now encased in an immense mass of solid adipose tissue, which hangs in pendulous folds over his chest and hips, and the flexures of his limbs. He enjoys excellent health, and has a moderately good appetite, living chiefly on dhal (peas) and rice. He has no complaint whatever, except a difficulty of breathing when he subjects himself to any very rigorous exercise. His appearance is extremely odd, and he walks with difficulty, and when tired, rests himself by leaning his pendulous abdomen against a wall. He is about the average height of Hindoo boys of his age, and his members are proportionately developed in every part; the genital organs, however, are not larger than those of an infant, while the testes are very small, and seem either to be undeveloped, or to have become atrophied. He has beautiful teeth and eyes, and is highly intelligent. His weight and dimensions are as follow: Weight, 206 lbs.; height, 48½ inches; girth of chest, 39 inches; girth of abdomen, 43 inches; girth of thigh, 27 inches; girth of calf, 16 inches; girth of arm, 15½ inches; length of foot, 6½ inches.

7. *Comparison of Menstrual and other Blood Spots.*

M. Robin terminates a memoir upon this subject with the following conclusions :

1. Menstrual blood differs under the microscope from blood drawn from the vessels by the mixture with the sanguineous globules of epithelial cells and leucocytes termed mucous globules; the former proceeding from the epithelium of the utero-vaginal mucous membranes, and the latter from the surface of these mucous membranes.

2. The spots produced by menstrual blood contain elements not found in those caused by ordinary blood, and which are held in suspension by the mucus of the genital passages carried away by the blood, consisting principally in epithelial cells and in the leucocytes of mucus.

3. By a microscopical comparison, these two descriptions of blood can therefore be distinguished.—*Annales d'Hygiène.*

MEDICAL PATHOLOGY AND THERAPEUTICS.

1. *New Hygrometric Theory of Cholera.*

The meteorological relations of the cholera epidemic were for the first time carefully studied in this country during the last visitation. It cannot be said that the results were very conclusive in any one direction, or that any theory of disease in relation to climatal disease has been eliminated from the investigations then made; but the council of the British meteorological society, in their last report, while recording their sense of the incompleteness of these and other collected observations for any medical theories, undertake to continue their labors, and express a strong hope of useful deductions.

M. de Ruolz, well known for important discoveries in the art of electrogilding, has been content to argue from a narrow basis, and has lately communicated to the Cercle de la Presse Scientifique of Paris an interesting series of facts regarding the proportion of moisture contained in the atmosphere during the prevalence of cholera. By analyzing the various statistical data collected during the French epidemics

of 1832, 1849 and 1854, M. de Ruolz has deduced the following facts: In 1832 the epidemic in Paris reached its height in April, when the hygrometer was lowest: it declined to the utmost in September, when the hygrometer was highest. In 1849 the hygrometrical observations at the observatory of Paris had been unaccountably neglected; but in 1854 afforded results quite in accordance with those of 1832. Hence M. de Ruolz infers that there undoubtedly exists a positive coincidence between the intensity of the epidemic and the hygrometrical state of the atmosphere, the former being in the inverse ratio of the humidity of the air. Other circumstances he considers to point to the same conclusion: thus, Lyons, a city remarkable for its damp atmosphere, owing to the two rivers which embrace it, has never been visited by cholera. Amongst washerwomen, who live in a damp medium, he says that cholera has always been very low, and he makes the same assertion with reference to "persons living in damp places, on the banks of rivers, &c." Finally, M. de Ruolz tells us that during the last choleraic invasion in London, the copious watering of the streets was found very beneficial. The views thus enunciated in the *Cercle Scientifique* did not remain wholly unopposed. Thus, it was remarked that sailors were very subject to cholera; that cholera made great havoc in Holland, where the air is notoriously moist; and that in certain localities the cholera has been known to lay waste one bank of a river and to spare the other. M. de Ruolz, however, pressed for further investigation, and suggested that, by way of experiment, in any future epidemic the streets should be well watered, and the fire-engines should play on the roofs of the houses in the infected quarter. It were idle to smile at his singular expedient, if indeed it were probable that any useful result could flow from it. And there is no valid reason why Mr. Braidwood should not brigade his force against an epidemic, or why cholera should not be attacked with the fire-engine as well as with the lime pail and the brush of the whitewasher—a favorite panacea with metropolitan vestries—or by the artificial creation of ozone and the introduction of certain ozonified breezes, as more subtle chemists have recently suggested. But we have the strongest doubts whether M. de Ruolz's theory will "hold water." The experience of Lambeth, of Wandsworth, and other humid districts close to the river side, has certainly not offered confirmatory facts; and though unacquainted with the actual statistics of deaths from cholera amongst London washerwomen, we are in possession of a number of isolated obser-

vations which do not dispose us to regard soapsuds as a prophylactic against epidemics in the sense which M. de Ruolz suggests.

2. *New Theory and Treatment of Chlorosis.* By Dr. VON MAACK.

The glycogenic function of the liver is hardly made known, and already pathologists hasten to assign to it a part in the pathogeny of diseases. Although we receive the ideas of the author with the greatest reserve, we republish his theory in order to illustrate this scientific tendency, common to all ages.

"The diminution of the red corpuscles in the blood of chlorotic patients," says the author, "is an established fact. These corpuscles owe their color to the iron which they contain; it is, therefore, evident that the quantity of this metal in the blood is diminished in cases of this kind. This diminution is not the result of resorption, for the urine contains only a small quantity of solid matter, but it is the consequence of bad elaboration.

We know also that the very small quantity of iron which the organism in the healthy state draws from the ingested aliments is quite sufficient for all its wants, and that the bile is the only secretion which contains it in notable quantity.

This being known, how do we explain the formation or development of chlorosis in a young woman who enjoyed good health previously? She takes the same aliments after the appearance of the disease; it is, therefore, impossible to attribute this affection to a privation of the ferruginous element, for, afterwards as before, the same quantity of it is absorbed, and has sufficed for many years to maintain health.

The real cause is more likely this, that it is impossible for the organism to transform the iron into hematin and to fix it. From what does this impossibility arise? M. Lehmann has proved that hematin, like salicin, phloerhizen, etc., is a saccharine compound. Hematin needs, therefore, sugar for its formation. Thus, as soon as the saccharine secretion of the liver is diminished or arrested, the formation of the coloring substance of the blood will cease, and consequently that of the red corpuscles.

The true origin of chlorosis would, consequently, be the want or the diminution of the quantity of sugar elaborated by the liver."

The author draws the following conclusions from his premises :

1. The treatment of chlorosis must consist in the use of sugar. 2. The object of the treatment must be to re-establish the saccharine secretion of the liver. 3. The medication which consists in the abundant use of iron has not introduced into the organism an element which was wanted there, as is believed, but has cured by acting upon the healthy secretion of the liver.

The best remedy, according to Dr. Von Maack, consists in the use of grape sugar and of honey. This treatment of chlorosis, it seems, has been practiced for a long time by the people in the northern part of Schleswig, and of certain regions of Hanover. An adjuvant to it is cold water used freely as a drink ; already Petter has recommended it as excellent in diabetes.

Archiv für Wissenschaftliche Heilkunde—Union Médicale.

3. *On Diphtheria.*

Many cases of diphtherite, seemingly the most trivial, prove unexpectedly fatal, and in these cases indications of impairment of the renal functions are constantly precursory of an unfavorable termination. Hence the necessity of, morning and evening, making an examination of the urine ; if albuminuria be present, the prognosis should be carefully guarded, though not necessarily fatal. (Dr. W. F. Wade.)

The diphtheritic exudation depends on a parasitic fungus, the *oidium albicans*, and in the treatment of the affection, "antiseptics and parasitocides appear to be the most efficient remedies." Of these the tincture of the sesquichloride of iron (an antiseptic) and the hydrochlorate of potass are the most efficient. The latter taken alone will sweep away the pellicle in a few hours. Hydrochloric acid is also useful. (Dr. T. Laycock.)

A case is related illustrative of several important points of treatment. On the third day, the disease progressing and considerable exudation existing, a strong solution of nitrate of silver was applied, the exudation being previously removed as far as possible without the use of force. In four hours the report states that the breathing had become "noisy, not from implication of the larynx, but from blocking of the posterior nares from increased swelling." Now in such cases the local treatment cannot be too soothing and gentle. One point more is particularly worthy of note, that

inhalation of steam seemed always to give great relief, and two distinct attacks of laryngeal spasm were relieved by it; a hot infusion of chamomile was used. A carefully strained infusion of chamomile used by means of a laryngeal or other syringe, to wash out the throat, is peculiarly grateful—and in children, if there be much accumulation behind the nares, it is a useful plan to syringe the throat through the anterior nares with the same infusion, and the throat outside may be surrounded by soothing warm applications. (Dr. J. S. Ramskill.)

It will be found that chlorate of potash used freely as a mouth wash, acts just as well in ulcerative stomatitis (a diphtheritic affection) as when given internally. Why not try the chlorate as a topical application in cases of pharyngeal and tracheal diphtheria? By means of a sponge probang and a larynx syringe, a solution might without much difficulty be brought into contact with these parts. A saturated solution should be used, and freely and frequently applied. (Mr. Hutchinson.)

After clearing the bowels with calomel and rhubarb, order strong beef tea, wine, and above all, Bass' pale ale; patients express themselves much relieved in the throat as it is swallowed, and feel greatly exhilarated after taking it. One ounce of the compound tincture of quinine taken in wine and water every four hours, is a medicine of the greatest use. Apply nearly equal parts of honey and concentrated muriatic acid by means of a probang, about every sixth hour. After stripping off the false membrane, a gargle made with tannic acid and water affords great comfort. (Mr. J. P. McDonald.)

The local application of strong nitrate of silver solution is almost "indispensable." Internally, chlorate of potash and hydrochloric acid may be given according to the following formula: Chlorate of potash, two drachms; hydrochloric acid, one drachm; water, eight ounces—half an ounce for a dose every one, two, or three hours, according to the urgency of the symptoms. The undiluted acid should be poured upon the powdered salt whilst in the mortar, and as soon as the powder assumes a yellow color and fumes of chlorine arise, dash in the water, by which the decomposition is arrested and the free chlorine retained in the solution. Where the disease extends to the larynx and trachea, and the symptoms become croupy, small doses of calomel and antimony are demanded, the system at the same time being supported by stimulants. (Mr. H. Lambden.)

Dr. Kingsford condemns the use of mercury in these cases. In a late number of the *Lancet* he says it is "especially contra-indicated."

Turpentine in many cases acts somewhat similarly to mercury, preventing effusion of lymph, but stimulating instead of debilitating. It is frequently appropriate where mercury cannot be used, and may be employed with much advantage in diphtheria. To a child of from two to six years of age give ten minims of the spiritus terebinthinum every second hour, and five grains of the carbonate of ammonia every second hour, the child taking the turpentine one hour and the ammonia the next. The turpentine may be mixed up with egg and syrup. Besides this the child should take port wine, porter, and beef tea, or wine with the yolk of an egg, ad lib. This plan of treatment is most applicable to cases where decided croupy breathing and fits of suffocation have made their appearance. (Dr. E. Perry.)

The following plan of treatment has been found of the greatest use in this affection :

1. A temperate, dry, well ventilated room as can be obtained, no one being allowed to sleep in it except an attendant. Crowded bed rooms and animal effluvia are an exciting cause.

2. A calomel purgative, varying in strength according to the age and size of the patient; and in children, where symptoms of laryngitis appear, a rapid exhibition of the chloride of mercury, such as a grain to two grains every hour till the breathing is easier, and then every three or four hours, till the false membranes are loosened, the bowels evacuate green stools, or vomiting.

3. The decoction of cinchona with hydrochloric acid, varying the dose of the latter from one minim to ten every four hours, in from a teaspoonful to two teaspoonfuls of the former.

4. Gargle with chloride of sodium and vinegar, a tablespoonful of each in a teacupful of hot water; also inject this up the nostrils when they are becoming obstructed. This excels all other gargles; it relieves the breathing and the fœtor, and causes the ulcers to heal.

5. Apply the stick of nitrate of silver to every part where false membrane or exudation can be seen. When the disease spreads beyond the reach of the caustic case, a probang and clean sponge well saturated with a strong solution of nitrate of silver will answer.

6. Rub the external fauces with compound iodine ointment night and morning; and where erysipelas may appear, apply the stick, and lay on a plaster of strong mercury ointment.

7. Keep the room and all else sweet and clean.

8. A nutritious diet is necessary. A little mutton every day; boiled milk, rich gruels, and beef tea, with hot port wine and water (half wine with sugar and lemon) for all above ten years, and warm milk and water for minors. All things should be taken warm. Cold drinks are an exciting cause. (Mr. R. Cammack, jun.)—*Braithwaite*.

4. *Easy and Certain Cure of Facial Neuralgia.* By Dr. BURDACH of Luckau.

Dr. Burdach recommends corrosive sublimate as a specific, never failing remedy, in cases of facial neuralgia. He has used it for more than thirty years, and always obtained a prompt and permanent cure, no matter how severe a form the disease had assumed. The formula he employs is the same which he recommended in Hufeland's Journal for 1826 and 1830, in the treatment of rheumatic gout; it is the following: R. Liquor. hydrarg. bichlorid. corrosiv. (Pharmac. Boruss.) ʒjss; vini semin. colchici, ʒss. M. S. Thirty to sixty drops every two hours.

Cases requiring the latter dose were extremely rare. (The liq. hydrarg. bichlorid. corros. of the Prussian Pharmacopœia contains corrosive sublimate and hydrochlorate of ammonia, one grain of each to the ounce of water.) Each dose of the medicine should be followed by a draught of the decoction of the species ad decoctum lignorum. (The species ad decoct. lignor. consists of guaiacum wood, two parts; lappa and saponaria, one part of each; liquorice root and sassafras, half a part of each. One ounce of this mixture is used to a pint of water.) There is about one-thirtieth to one-fifteenth of a grain of sublimate given in each dose, a quantity which is generally well borne by the patients. In order to assist the cure, Dr. Burdach sometimes ordered the local application of veratria ointment, but in the generality of cases it could be dispensed with, as the sublimate acted promptly enough without it. In very sensitive patients, acetic acid, chloroform, or tincture of opium, might be added to the given formula; such an addition, however, is not to be recommended.

To obtain the prompt action of the remedy, it is absolutely necessary to give it in fluid form, and at the intervals prescribed above, for in the form of pills it seems to exercise but little control over the disease.—*Medizinische Central Zeitung*.—*N. A. Med. Chir. Review*.

5. *Carbonate of Ammonia in Measles.* By Dr. PIERCE, Iowa.
(Communicated for the Boston Med. and Surg. Journal.)

Having seen the carbonate of ammonia used in scarlatina with very satisfactory results, I was induced, about two years ago, to try its effects in measles. Since that time, I have used it extensively in that disease, and with most satisfactory results. For about two months past, this disease has prevailed quite extensively in this vicinity, and in a very severe form. In nearly every case that I have been called upon to attend, I have prescribed the carbonate of ammonia, and in every case where this has been given, the disease has come to a speedy and favorable termination. The medicine should always be given early in the disease, before the eruption appears; or if not, immediately upon its making its appearance.

My usual prescription is: R. Ammonæ carb., ʒi; aquæ camph., ʒiiss. M. Dose, a teaspoonful three times a day, varying the dose according to the age of the patient and other circumstances.

6. *Case of Poisoning by Phytolacca Decandra.*

Three young peasants having dug up some large fleshy roots, and, believing them to be of a cathartic nature, they ate a small quantity. An hour afterwards, all three observed that they had lost their strength; there was a general feeling of coldness and nausea. Two vomited, and had repeated stools; the third, who had eaten more than either of them, had neither vomiting nor griping, but much greater prostration. Flumiani, arriving half an hour afterwards, found the following symptoms: Countenance more or less altered, resembling cholera patients; tongue almost normal; voice hoarse; skin cold and slightly blue; pulse depressed and small. There was complaint of a feeling of oppression at the epigastrium, with sensation of weight and extreme thirst.

As the poisoning was produced by a depressing substance, recourse was had to remedies of an opposite character—Malaga wine and rum. The root which had produced these results, being examined botanically, was pronounced to be that of the *phytolacca decandra*, commonly known as Poke root. Three hours after the attack, there was perfect reaction—a species of intoxication had followed the stupor, the cutaneous heat was elevated above the normal point, and the pulse was full. On the next day, the patients were well.

Journ. de Chim. Med.

7. *Large Dose of Opium taken by a Child.*

Dr. Hays related to the Philadelphia college of physicians the case of a child not quite six years old, who took by mistake a powder containing seven and a half grains of opium. He only saw the child fourteen hours afterwards, and was informed that it was at first much excited, and then became drowsy. The narcotism was very profound, gradually wore off, and at the end of three days had entirely disappeared.

American Jour. of Med. Science.

8. *Arrest of Singultus and Borborygmus by fixing the Diaphragm.*

Dr. Wolff states that he has frequently relieved obstinate hiccough occurring in diseased and other conditions by the following procedure. The patient must take a deep inspiration, and then keep the abdomen forcibly expanded as when straining hard at stool, giving way to the necessity of respiration as seldom as possible, and then by rapid inspiration. It requires some practice before success can be obtained. The same process is of great use in the borborygmi to which ladies are often subject.—*Deutsche Klinik.*

SURGICAL PATHOLOGY AND OPERATIONS.

1. *New Mode of Relieving Retention of Urine.*

Langston Parker, Esq., surgeon to Queen's hospital, Birmingham, states (British Med. Journ. May 21, 1859), that he has very recently succeeded, in two separate instances, in relieving retention of urine in the following manner:

"A gentleman lately entered my consultation room in great pain from retention of urine. He had not passed water for many hours; the bladder was much distended. He stated that ineffectual efforts had been made to pass a catheter, during which operations he had lost a considerable quantity of blood. I attempted to relieve him by the catheter, but failed to do so; I tried instruments of various sizes and va-

rious curves, but could not succeed in passing one into the bladder. I then took a No. 2 wax bougie, and inserted a small portion of potassa fusa into the end of it, after the manner proposed by Mr. Whateley, and practiced by Mr. Wade, in the treatment of permanent stricture of the urethra. I well moulded the wax over all but the extreme point of the caustic, and passed it rapidly down to the point of obstruction, by pressing against this for a short time, it yielded, and I had the satisfaction of finding the bougie easily enter the bladder. I directed the patient to strain as I withdrew the instrument; a stream of urine followed, and the bladder was emptied. The retention did not again occur, and very little irritation accompanied or followed the proceeding. On the next day, the patient made water freely, but in a small stream.

"The second case was very similar. The patient had traveled some distance by rail. The bladder was much distended, the symptoms urgent, and a catheter could not be made to enter the bladder. A small wax bougie was armed as in the last case, passed down to the stricture, and firmly pressed against it. It yielded very shortly; the instrument entered the bladder, and a stream of urine followed its withdrawal. This patient had a second attack of retention two days afterwards, which was completely relieved in the same manner."

2. Bozeman's Operation in France.

On the 28th of April the first operation in France by a French surgeon, was performed at "Hôpital Necker," upon Bozeman's method (button suture), for the cure of vesico-vaginal fistula. M. Follin, a young surgeon of great promise, who operated in this instance, with M. Verneuil, of whose interesting lectures upon plastic surgery we took occasion to allude in our first communication upon this subject, are laboring to bring the operation into notice and use in the hospitals of Paris. M. Jobert de Lamballe, who operates more frequently, perhaps, than any other surgeon in France, goes on treating these grave accidents as hitherto, just as if no better method or more successful operation was known than the one he performs. M. Follin's patient, though of a rather delicate constitution, was in good health. She was 36 years of age, and the accident occurred four years ago, in her first labor. She had been operated on already once, about three years before, by the same surgeon, but it re-

sulted in no good. The fistula occupied a considerable portion of the bas-fond and a part of the trigone of the bladder. Nine sutures were used in the button to bring the parts together, after the edges had been carefully pared. The patient had not a bad symptom after the operation, and on the ninth day the sutures were removed, and the cure was found to be complete.

J. F. N.

Paris, May 5th, 1859.

3. *On Inframammary Pain.* By HOLMES COOTE, Esq.

[On this interesting subject, which has hitherto been called neuralgia, Mr. Coote says:]

Doubtless, this pain is excited by more causes than one; and I cannot pretend to explain the exact condition during its persistence of the nerve fibrils or of the vessels which surround them. But I would remark, that *inframammary* pain is one of the very earliest and commonest symptoms of incipient lateral curvature of the spine. I know it so frequently in connection with this deformity, that I should almost insensibly investigate the state of the spine upon hearing the complaint of pain; and, finally, it has been recognized and described in this point of view since the days of Delpech, and for all I know, anterior even to him. He says (*Orthomorphie*, tom. ii, p. 10, 1828), "Another interesting remark, and which it is necessary to know, a priori, because the object which it concerns, can teach nothing by induction, is relative to a constant pain, somewhat vague in its seat, which takes place sometimes in the epigastric region. This pain has no known cause; its duration is usually constant; but its intensity is variable; its periods of calm and of exacerbation have nothing regular; there is no disturbance of the functions of the organs in the seat of pain; nothing quiets it; nothing relieves it. It is accompanied by slow, progressive and inexplicable deterioration of the general health. It is evidently allied to something grave but quite clandestine. . . . In the winter of 1817 I was consulted by a young person, aged 11, of pale complexion and naturally slight frame, who for two years had been suffering from pains, often coexistent, in the epigastrium and left *inframammary* region. She had become very thin; her sleep was often disturbed by her suffering. The pain was never acute, but its constancy made it intolerable. The girl had lost her gaiety and become very depressed, but respiration was good,

the functions of the heart free, and the stomach did not appear the source of the disorder."

In this case curvature of the spine was recognized, so slight that Delpach was obliged to mark the apices of the spine as processes with ink, and then to let fall a delicate plumb line in order to demonstrate the deviation.

The greater frequency of spinal curvature to one side may explain in some measure the obedience of inframammary pain to a similar law: its greater frequency in the dorsal region may account for the occurrence of the pain in the superior and not in the inferior part of the abdominal walls; and if there be any connection between the two, we may understand why it does not occur in other parts of the muscular system.—*British Med. Journal.*

4. *Hindoo Lithotomy.*

The following lucid description of the operation (probably written 1,000 years before our era) which was well adapted to the spare habits of the Asiatic, has a marked resemblance to that described by Celsus, who may have obtained it from the east; and has since been well known as cutting on the "gripe," and is interesting from being the most ancient on record: "The surgeon is to press the calculus downwards, by rubbing the abdomen with his right hand, while the index and middle fingers of his left, with their nails cut short, and well oiled, are inserted into the rectum. With well regulated force, the calculus is to be pushed downwards, until it form a swelling on the left side of the perineum, when it is to be cut open, and removed. The surgeon must take care to remove the calculus entire; and with this object a scoop is to be used, when it is soft, as when a small portion is left, it will slowly form another."

Hessler's Hindoo Medicine.

5. *Light the only Cause of Purulent Ophthalmia of Infants.*

Mr. Ballard (Lancet) has written an original paper upon the above subject. The generally received opinion that the disease is the result of contact with vaginal secretions, is disputed—1st, because the disease does not appear until several days after birth; 2d, extreme cases of leucorrhœa, and yet no ophthalmia if the room was kept dark; 3d, no leucorrhœa and yet ophthalmia, the room being kept light.

The proofs in favor of light being the cause of the disease are—1st. Expose an infant to bright light, and you can prognosticate the occurrence of the disease. 2d. It never prevails if the child is kept in the dark. 3d. That many cases had been cured by obscurity only.—*Med. Reporter.*

6. *Gunpowder a Remedy for Toothache and for Scabies.* By M. LAFFONT.

All remedies are good, if they cure. M. Laffont recommends his patients to put a teaspoonful of powder into a piece of fine linen, and to apply this little bag to the painful tooth. He has employed this remedy in twenty cases. All the patients told him that it provoked, but only for a few instants, a slight pungent heat in the mouth, but that the toothache completely disappeared.

M. Laffont learned from a traveler, that gunpowder was much used in the colonies against scabies. Three parts of powder, incorporated with ten parts of molasses, constitute a mixture, which is rubbed well on the whole body; the next day a bath is taken in water impregnated with soap, and the cure is finished. M. Laffont has used this friction in three cases of scabies, and has cured them radically.—*Journal de Médecine de Bourdeaux*—*N. A. Med. Chir. Rev.*

7. *New Anæsthetic Agent.*

Mons. A. Claisse announces, in the *Gaz. des Hôpitaux*, that he has employed the following method of producing local anæsthesia, for some years, principally in the extraction of teeth, the lancing of paronychias, and other minor operations. A solution is made of camphor in ether. The part is rubbed with a sponge saturated with this solution for a minute, in the case of the gums, and then the operation is performed. Where any sensation of pain is felt, experience has shown the propriety of renewing the frictions, when the sensation of pain will either be greatly lessened or destroyed.

8. *Glycerine in Pruriginous Affections, &c.*

M. Paupert states that prolonged experience convinces him of the justice of the opinion M. Demarquay entertains

of the value of this substance used in lotion or ointments in pruriginous affections, accompanied or not with cutaneous eruption. In vaginitis too, and in slight ulcerations of the cervix uteri, it forms a most excellent basis (4 parts of tannic acid to 60 of glycerine), and a cure soon results. M. Demarquay, indeed, uses it as a substitute for grease whenever this is possible, in applications to the skin or superficial wounds. It possesses the great advantage of preserving the substances mixed with it for a long time unaltered.

Moniteur des Hôp.

9. *Strong Sulphuric Acid in Hospital Gangrene.*

M. Pinilla, of the St. Jean de Dieu, Madrid, states that his success with this application has been very great. Pieces of old linen are dipped in the acid and applied, the irregularities of the wound being filled up with pellets of charpie similarly treated. After leaving the dressing exposed to the air for a few minutes, it is covered with dried charpie and a compress and bandage. The pain is very great during two hours, and then gradually subsides, having been accompanied by no general reaction. A thick, hard eschar is produced, which, cracking at the end of eight or ten days, exposes a healthy ulcerating surface, which is to be dressed with spirits of camphor (15 parts of camphor to 500 alcohol.)—*L'Union Méd.*

10. *Black Oxide of Copper in Loose Teeth.*

Dr. Hoppe strongly recommends, when the teeth have become loosened, rubbing some of the black oxide of copper well into the gums every morning by means of the finger. This induces the contraction of the hyperæmic periosteal vessels, and the teeth again become firm. Various stimulating applications will produce the same effect, but with injury to the gums.—*Berlin Med. Zeit.*

11. *Treatment of Varicose Veins by Blistering.*

The radical treatment of varicose veins, which at present is usually preferred, consists of the application of pins or needles beneath the vein, laying a piece of bougie over it, and then applying the twisted suture around the pins and over the bougie. Latterly Mr. Ure (*Lancet*) has treated

several cases of varix successfully by repeated blistering over the veins, the result being consolidation and subsequent obliteration. A radical cure is, therefore, effected as completely as when the needles have been employed. This plan deserves a fair trial.

12. *Arsenic in Vulvar Pruritus.*

M. Imbert-Goubeyre, in a series of articles upon this affection, draws attention to the great utility of arsenic, in the form of Fowler's solution, in its treatment.

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OBSTETRICS, &c.

1. *The Relative Frequency of the Various Presentation of the Fœtus.* By WILLIAM C. ROGERS, M. D.

MESSRS. EDITORS—Having been engaged for a number of months past in collecting midwifery statistics for a special purpose, I send you one of the results of my labors, in the following table, of the relative frequency of the various presentations of the fœtus:

Whole number of presentations,	-	-	88,342
Head (including "face to pubis," etc.),	-	-	85,210
Breech,	-	-	1,754
Feet and knees,	-	-	445
Funis (the accompanying presentation not given),	-	-	219
Arm,	-	-	83
" and head,	-	-	38
" " and funis,	-	-	9
Head and funis,	-	-	57
Placenta,	-	-	25
Face,	-	-	299
Shoulder,	-	-	69
Transverse,	-	-	120
Sacrum,	-	-	1
Back,	-	-	6
Belly,	-	-	6
Forehead,	-	-	1

Amer. Med. Monthly.

2. *Remarkable Disappearance of a Pessary, and its subsequent Removal from the Rectum.* By Dr. LUDERS. (Ed. Med. Journal.)

A small though elderly lady, who had already borne several children, was seized in autumn 1855 with a complaint in the lower part of the abdomen. The midwife consulted diagnosed a prolapsus uteri, and proceeded to introduce a pessary. The first tried proved too large, and with some pain and difficulty a less one was introduced. Next morning it was not to be found; and, though nothing was known to have come away, she was soothed with the expressed opinion that she must have lost it. The complaint progressed, and assumed all the symptoms of a peritonitis; repeated examinations disclosed a tumor between the rectum and vagina. Half a year after the disappearance of the pessary another physician discovered the tumor mentioned, and a transverse cicatrix in the vagina. For two years she continued to suffer more or less, till in autumn 1857 an opening was formed in the anterior wall of the rectum, through which the pessary was at once and easily removed. It was a common caoutchouc ball, stuffed with hair, $3\frac{1}{2}$ inches long, $2\frac{1}{2}$ broad, and 1 inch thick, and with a small opening in the middle. The patient made a rapid recovery, and it is remarkable that no trace of prolapsus was ever discovered. (The foregoing, says the Rep., affords a melancholy instance of the painful sufferings to which even educated females are exposed, from the prevalent habit of consulting *midwives* in sexual complaints, and how necessary it is to forbid such to introduce pessaries under pain of severe punishment.)—*Deutsche Klinik—Prager Vtljschft.*

We don't know what our esteemed friend, the author of "Horæ Subsecivæ" will say to this. In no country of the world are midwives so carefully educated as in Germany; yet the foregoing case distinctly shows how incompetent they are to make the simplest diagnosis, or perform the easiest operation, and the remarks appended prove that such ignorance is no rarity. And, as additional proof, and from an unprejudiced source, we may add that the late lamented Kolletschka, professor of medical jurisprudence at Vienna, was in the habit of saying in his lectures, that broken arms, and legs, and heads left behind in the uterus, were not at all unfrequent, but often happened during the first years particularly of an Austrian midwife's practice. Yet nowhere do midwives receive a better education, or have a larger practical field for instruction, than in Vienna.

3. *On the Retrogression of Labor.* By Dr. CHARIEN.

C. directs attention to the fact, that at any period of pregnancy, but particularly during the latter months, labor may commence and proceed regularly, so far as that the os uteri is opened up so considerably as to put the projecting bag of membranes on the stretch, and yet not only does complete rest recur, but the retrogression is so complete, that the os uteri closes again till some weeks after, when the labor begins afresh, and proceeds uninterruptedly to its close. In evidence of this, he cites four cases:—The first occurred in the Obstetrical Clinique at Paris. A woman, eight months pregnant, was seized with regular pains; the os uteri opened to the size of a five franc piece and was soft; towards evening the water came away; during the night the pains continued regularly, but at 4 A. M. ceased entirely; the os uteri gradually closed, and, by the following evening, was quite shut. Twenty-one days after, the labor set in anew, and proceeded regularly to its termination. In the second case, the birth took place 32 days; in the third, 35 days; and in the fourth, 22 days after the first occurrence of labor.

Ed. Med. Journal.

4. *Anatomy of the Female Organs.* By M. RONGET.

M. Charles Ronget's interesting researches on the anatomy of the female organs are summed in the following propositions:

1. In woman the body of the uterus presents the structure of an erectile organ, of a true corpus spongiosum.

2. That to the ovary also an erectile bulb is attached.

3. That in all the classes of vertebrata, and especially in all mammifera, a special muscular apparatus embraces the oviduct and ovary, and effects their adaptation to each other.

4. That the fasciculi of the ovario-tubal muscular membranes (mesoarrium and mesometrium) have such relations with the corpora spongiosa, and especially with their efferent sinuses, that, at the moment of contraction, the meshes of the network in the midst of which run the venous channels, contracting in every direction, these must necessarily be compressed, and the discharge of blood more or less completely stopped.

5. That the contraction of the ovario-tubal muscular apparatus persisting during the whole period of ovulation, the obstacle to the passage of blood and the erection of the

corpora spongiosa of the uterus and ovary, which is the result, have the same duration.

6. That menstruation coinciding also, on the other hand, with ovulation, it is natural to consider it as the immediate consequence of the erection of the uterus; a true menstrual hemorrhage, moreover, never presenting itself but where the uterus possesses a truly erectile structure.

7. That if sexual excitation, as seems probable, can determine the erection of the uterus and ovary, it is easy to account by that fact for the coincidence of the periods of menstruation and ovulation.

5. *Dysmenorrhœa.*

Palliative treatment.—The agent most serviceable of all, and that on which I chiefly rely for relieving the pain of dysmenorrhœa, is morphia in one or other of its forms. This generally acts better combined with some strong diffusible stimulant, as chloric ether, which forms an admirable adjuvant to the action of the opium. The inhalation of chloroform, when the pain is severe, is often of the greatest use, for it is a singular fact that if you can bring the patient into the anæsthetic condition for only a short time at the very commencement of the attack, she will frequently remain free from pain whilst the discharge continues. There are only two local anodynes from which I have obtained many good results; these are carbonic acid gas and the vapor of chloroform.

Preventive treatment.—When dysmenorrhœa is kept up by a state of ovarian or uterine congestion or inflammation, we must try to reduce these states during the catamenial intervals, by repeated bleedings applied to the hæmorrhoidal vessels, by assiduous counter-irritation to the groins or sacrum, and by all the other usual internal remedies employed against local inflammation and congestion of other isolated organs of the body. If chiefly neuralgic in character, alteratives, and especially mineral tonics, good diet and regimen, and whatever tends to raise the standard of health, will best cure the neuralgia.

For the gouty and rheumatic forms of the disease, useful results will be found from the administration of colchicum and guaiacum, either alone or in combination with alkalies. Bromide of potassium possesses a sedative action on the sexual organs possessed by no other drug in the pharmaco-

pœia, and in many cases by its employment you may succeed in warding off attacks of dysmenorrhœa.

In the treatment of membranous dysmenorrhœa, besides the other remedies usually employed, powdered nitrate of silver may be applied to the uterine cavity by means of an instrument contrived for the purpose.—*Braithwaite*.

6. *Obstructive Dysmenorrhœa and Sterility from Contraction of the Cervix Uteri.* By Prof. SIMPSON.

When dilatation is effected mechanically, whether slowly by sounds, or rapidly by sponge tents, relapse of the stricture or contraction is very apt to return after a time, just as so often happens after the treatment of bad stricture of the male urethra, by merely dilating instruments. The best and speediest mode of cure is to have recourse at once to dilatation of the os by incising it at both sides. For the performance of this operation, an instrument or metrotome is required; this must be introduced as far as the os internum, where the incision begins, at first quite shallow, and then deeper as the instrument is withdrawn, till at the os externum the cervix is cut across in all its thickness. If you cut too deeply in the upper portion of the cervix, you run the risk of wounding some of the veins of the plexus uterinus—otherwise the hemorrhage is not of consequence. The wound must be opened up every two or three days with the finger to prevent union, or the corners of the wound may be touched with a piece of nitrate of silver, with a like good result. There are few operations in surgery “so perfectly simple in their performance, and so entirely satisfactory in their results.”

7. *Nitrate of Silver in the Vomiting of Pregnancy.*

Dr. Channing states that he has found the administration of nitrate of silver (arg. nit. gr. iv., opii. gr. viii., in pil. xvi, cap. 1, ter) very useful in the vomiting of pregnancy. Writing from Boston, on the “moral state” of Massachusetts, he represents criminal abortion as a daily practice there, performed in the most unblushing manner, and with complete impunity.

HYGIENE.

Repression of Illegitimacy.

Our civilization is fairly open to the reproach of fastidious prudery and excess of delicacy. The kid glove school of social reformers shrink from handling the unclean sores that affect the body corporate of humanity, and have always preferred that they should be swathed in the manifold bandages of conventional decency, plastered with the old fashioned unguents of mechanical charity, and left to the care of the providence that guards unseen misery and misfortune. It is not surprising, therefore, that the active advocates of social progress, who come now to rid us of this reproach of a too delicate abstinence from the investigation of such evils, should find that materials are wanting even for the first stage of the enquiry. The great element in any investigation which aims at reform is an accurate estimate of the evil to be reformed. Amongst the defects of our society which most constantly and obtrusively present themselves, is illegitimacy; an evil which haunts all our parishes, in town or country; which rears its head in every hamlet, and stains the purity of every village. It lurks in the smiling corn fields, and in the dark alleys of the crowded town. Amid the Presbyterian population of Scotland, and the Catholic people of Austria, it attains a higher fruition of sin and distress than in any other countries of Europe. In the kingdom of Great Britain some 45,000 illegitimate children are annually born. There are many circumstances of singular and contradictory import connected with the advent of these unfortunates, of whom so many are destined to an early death, from neglect, cold, desertion, starvation and violence. The proportion of illegitimate births was found by the registrar general of Scotland to be greatest, not amongst the seats of rapidly advancing population, or in those counties which contain our largest cities with their overcrowded inhabitants, but in those which are purely agricultural. The vastness of the evil, and its surprising excess in some localities when compared with others, might well induce a careful investigation of all that relates to its growth, or may be supposed to favor its extension. Yet Mr. Acton stated last week, in a paper which he read before the Statistical society, "On illegitimacy in the London parishes of St. Marylebone, St. Pancras, St. George, Southwark," that illegitimacy has

no literature; and in looking through the lately published catalogue of the Statistical and other societies, he failed to find mention of the word. Mr. Acton made a very able and useful contribution to the study of this important question by the analysis of the materials existing in these three extensive parishes. Analyzing the published figures of the registrar general, he showed that in 1857, out of 388 illegitimate children who died, 327 fell before attaining the age of one year, of whom 110 perished between the ages of one and three months. Few children died within the first week of birth; hence it may be concluded that they are born healthy, and that the excessive mortality is due to neglect, probably consequent on the destitution of the mother.

Surely this sequence of facts appeals loudly to the charity of the worldly prosperous, that they dismiss the reluctance to assist women who have given birth to illegitimate children, not only out of mercy to their fallen condition, but in pity for the young lives that hang upon them. One hundred and ninety-four mothers were domestic servants; as to the occupation of the fathers, it appears that the largest number are of the class of laborers, where the source of evil to be removed is the promiscuous herding of both sexes, so common among the poorer classes; and next rank domestics, indicating a cause of immorality already sufficiently known.

Mr. Acton indicates striking defects in the bastardy laws, and suggests that parishes should have the same power of recovering the sums expended on illegitimate children as they have now from the fathers of those born in wedlock. To cut off the supply of harlots, he suggests that the demand should be diminished, by making the penalties in purse and person heavier than they now are, as against the father of the child. Hitherto, suggestions have been mainly confined to the regulation of the sources of the supply. Mr. Acton aims at checking the demand. It is a maxim of approved force in economic science, and we see no reason why it should not be brought into play. Let the father be legally liable to the parish for the expense of the accouchement of the woman and the rearing of the child, and let the parish be armed with power to recover the amounts so expended. Of course no profits should accrue to the mother as the wages of her sin; for the term "seducer," so constantly applied to her paramour, is something more than a mere conventionality—it is very often a falsehood. Such provisions would undoubtedly increase the number of marriages amongst those who have mated irregularly, being equal in rank of life; and they would, we believe, greatly repress

the evil discussed. Only let us beware of encouraging the action of government boards, such as Mr. Acton suggests; this were an infallible recipe for bringing things to a deadlock.

EDITORIAL AND MISCELLANEOUS.

Free Medical Schools.

IN spite of the universal pursuit of money, so characteristic of the age, the observant reader may still discover occasional brilliant exceptions to the general rule; and it becomes the duty of the journalist to bring such rare instances of self-denying zeal for the welfare of mankind, prominently before the public.

This opportunity has been recently afforded us by some of the medical lights of one of our sister states, who, nobly forgetting their own interests, and devoting their valuable time and great reputations to the advancement of medical science, have associated themselves under the title of the CINCINNATI COLLEGE OF MEDICINE AND SURGERY, and offer the student all the advantages of the best medical education, without fee or reward.

The Cincinnati Medical News, published by Dr. A. H. Baker, the president of a distinguished faculty, including among its members the celebrated *Crumes*, *Pearsons*, *Chitwoods* and *Swanders* of the Buck Eye state, announces to the medical public their liberal proposition. In their prospectus for the coming session, these eminent gentlemen declare that they have determined to *elevate* the standard of medical education; and as this cannot be done without offering the student some special advantage, they resolve to found a *free school*, only charging fifty dollars as a matriculation and graduation fee, so as to cover *incidental expenses*.

These honored professors intend also to make a long step forwards in the cause of medical reform, and require that the student, before matriculating, shall give satisfactory evidence of having acquired a good English education, which may be done by the certificate of his teacher, or by his own composition at the time. A slight examination of the *Medical News*, which is the organ of the new institution, and is edited by the president, will enable us to see at once how high this standard of preliminary English education is to be placed; and as an example of the elegant style and fluent diction of this gentleman, who it is supposed will conduct the examinations on this point, we append in full his notice of the college under his charge, without alteration.

Cincinnati College of Medicine and Surgery.

We call attention to the Annual Announcement of this flourishing Institution, on our first page, and, am gratified to state that its success and increasing popularity; give satisfactory evidence of a true appreciation of the course adopted.

The REQUIREMENTS will be strictly adhered to, so that students who may wish to gain admission without an examination, will come prepared with their certificate. (See requirements.)

We have been told, repeatedly, that if we did not make this demand, our classes would be the largest in the Union; we hope this is a mistake, but if not, we are well satisfied to let other Schools have those who cannot come up to our very modest and just requisitions. We attended the *Convention of Medical Teachers*.—(see report in another column), in the hope that something would be done to regulate this great defect in our system of education, and that other Colleges would be willing, or required, to demand at the *matriculating door*, some evidence of literary attainment.—Vain hope!

Here in a paragraph, we see that the convention of medical teachers is shown in its proper light to the public, while nothing can be more disinterested than their noble determination *not* to have the “largest class in the Union.” Where is the faculty prepared to exhibit such unwonted self-denial, such positive martyrdom on the shrine of medicine.

The medical colleges have now to meet their doom under the scathing pen of this medical Luther. How perfectly and exactly does the following editorial paragraph expose *their sordid tricks*.

Annual Announcement.

Very many have enquired for the Annual Announcement of the Cincinnati College of Medicine and Surgery,—the one found on our first page, in this number of the *News*, is the only announcement issued by the Faculty.

The old plan of sending out a pamphlet of *sixteen pages*, by way of *puffing*, should be discarded, as an insult to the general intelligence of the members of the regular profession, and only suited to, and required by—*Quacks*, and Institutions that manufacture them.

As we read these bold and honest lines, we can imagine the venerable Jackson, or Wood or Meigs cringing beneath the cruel lash. Never again will they venture to issue their pamphlets of *sixteen pages*, hoping to delude the public and attract students. Hardened hypocrites—give over these worn out manœuvres, and if you will puff your school, get up a newspaper.

And how easy it is to bring out humble merit through the columns of the press. Thus, in the instance before us, where shrinking modesty contends with earnest zeal—see, how even the religious world hastens to do justice to those who deserve well of the public—see how eloquently Brother Willard of the Western Missionary sounds the praises of this band of heroes, and even forces them to republish their own eulogy in their own newspaper. As another example also of the high standard of literary requirement to be anticipated by this movement, we will abbreviate our own poor remarks to make room for the truly poetic burst of enthusiastic praise which rings like music in our ears.

[From the Western Missionary.]

A Visit to the Cincinnati College of Medicine and Surgery.

BROTHER WILLARD:—Knowing that while the columns of *The Missionary* are chiefly designed for the diffusion of religious intelligence, they are open for communications of a moral character, I desire permission to speak of a worthy enterprise, which has lately been started in our midst. I allude to the enterprise of *Free Medical Education*, as instituted and advocated in the "*Cincinnati College of Medicine and Surgery*." This institution promises to be an honor to our State, a benefit to community, and a star of hope to suffering humanity in gene-

ral; and while it will be an ornament to the galaxy of literary achievements, it will enhance the tone of medical science. I had the good pleasure of visiting this institution during its recent session, and found that its previously circulated reports were no exaggeration: During my stay in the city, prompted by my own curiosity, and greeted by the cordiality of the students, I made the acquaintance of a large medical class; of which a faculty might well be proud, and the profession feel highly honored. I found young men from all parts of this and adjacent States, diligently imbibing the instruction of an experienced faculty, whose medical ability and professional repute need no commendation; prompted not by the "dross of earth," or the "applause of humanity," but moved, rather, by the ills of the latter and the evils of the former, which, much to the detriment of that honorable profession, have been greatly increased, by the almost insuperable fees, ever stationed as a sentinel at its collegiate portals.

It is well known, by every close observer that the medical profession, like every other, is crowded with a large number of untutored quacks. Read the history of medical quackery, as it has come under your own observation, and behold the tens and scores of suppositious practitioners, void of art, and clad in ignorance; *unschooled* in the science of their profession, and consequently, *unskilled* in the practice of the same, and then ask whether a *Free Medical Institution*—one amply sufficient to afford such qualifications as our suffering humanity demands, is not a laudable enterprise. The young, the athletic, the fairest and the loveliest, in common with the aged and decrepid, are alike exposed to a mortal thrust from the deadly fangs of the quack, whose number is legion, and whose reliance is luck. And what is the probable reason of so much empiricism in the medical as well as other honorable professions? It is in many cases a scarcity of funds on the part of the student, who enters the profession without means adequate to the fees of the older institutions, which have ever been an invincible barrier, debarring the moneyless student from acquiring a thorough knowledge of his profession. But here, the rich man's son is not admitted because he is rich, and the poor man's son rejected because he is poor; but on the contrary, the moneyed and the moneyless, stand on an equality, and may alike enjoy the benefit of a thorough course of instruction, by complying with its several conditions, which are a satisfactory primary education, and a good moral character. S.

If our awe-struck reader has recovered his breath after this last extract from our cotemporary, we will proceed to show how "Brother Baker," having destroyed the peace of mind both of the conventions and colleges, concludes by the following *settler* to the Druggist published by Prof. Foot of the Ohio medical college. Of course, being a near neighbor of theirs, we cannot suppose that any feeling of rivalry could barb the editor's pen. From *most* men this might be expected—but no such naughty feeling is exhibited here:

We ask, if it is really true, as has been intimated, that the Faculty of the *Ohio Medical College*, are about to *amalgamate again*? strange

things happen 'now-a-days.' Of Prof. Foot, the editor, we must say, he is a young gentleman of the highest honor, and we think he must have been imposed upon; we are satisfied he will not permit his name to be associated with any journal that *smacks* of quackery.

Time and space admonish us to hold, so *other valuables* must lay aside for another occasion.

Adopting as our own the sententious and pointed lines which close the extract just noticed, we conclude, by asking all who admire true merit, combined with the most enlarged literary acquirement and the rarest modesty, to unite with us in wishing long life and prosperity to the *Cincinnati College of Medicine and Surgery*.

Alexander von Humboldt.

ALEXANDER VON HUMBOLDT died at Berlin on Friday the 6th of May, having been ill with a severe catarrh accompanied by fever since the 17th of April.

Eulogy by Prof. Agassiz, before the American Academy of Arts and Sciences, delivered on the 24th of May.

GENTLEMEN—I have been requested to present on this occasion some remarks upon the scientific career of Humboldt. So few days have elapsed since the sad news reached our shore, that I have had no time to prepare an elaborate account of that wonderful career, and I am not myself in a condition in which I could have done it, being deprived of the use of my eyes, so that I had to rely upon the hand of a friend to make a few memoranda on a slip of paper, which might enable me to present my thoughts in a somewhat regular order. But I have, since the day we heard of his death, recalled all my recollections of him; and, if you will permit me, I will present them to you as they are now vividly in my mind.

Humboldt (Alexander von Humboldt, as he always called himself, though he was christened with the names of Frederick Heinrich Alexander) was born in 1769, on the 14th of September, in that memorable year which gave to the world those philosophers, warriors and statesmen who have changed the face of science and the condition of affairs in our century. It was in that year that Cuvier also and

Schiller were born; and among the warriors and statesmen, Napoleon, the Duke of Wellington and Canning are children of 1769—and it is certainly a year of which we can say that its children revolutionized the world.

Of the early life of Humboldt I know nothing, and I find no records except that in his tenth year he lost his father, who had been a major in the army during the seven years' war, and afterwards a chamberlain to the king of Prussia. But his mother took excellent care of him, and watched over his early education. The influence she had upon his life is evident from the fact that notwithstanding his yearning for the sight of foreign lands, he did not begin to make active preparations for his travels during her lifetime. In the winter of 1787–88 he was sent to the university of Frankfort on the Oder, to study finance. He was to be a statesman; he was to enter high offices, for which there was a fair chance, owing to his noble birth and the patronage he could expect at the court. He remained, however, but a short time there.

Not finding those studies to his taste, after a semestre's residence in the university we find him again at Berlin, and there in intimate friendship with Willdenow, then professor of botany, and who at that time possessed the greatest herbarium in existence. Botany was the first branch of natural science to which Humboldt paid especial attention. The next year he went to Göttingen, being then a youth of twenty years; and here he studied natural history with Blumenbach; and thus had an opportunity of seeing the progress zoology was making in anticipation of the great movement by which Cuvier placed zoology on a new foundation. For it is an unquestionable fact that in first presenting a classification of the animal kingdom based upon a knowledge of its structure, Blumenbach in a measure anticipated Cuvier; though it is only by an exaggeration of what Blumenbach did that an unfair writer of later times has attempted to deprive Cuvier of the glory of having accomplished this object upon the broadest possible basis. From Göttingen he visited the Rhine, for the purpose of studying geology, and in particular the basaltic formations of the Seven Mountains. At Mayence he became acquainted with George Forster, who proposed to accompany him on a journey to England. You may imagine what an impression the conversation of that active, impetuous, powerful man made upon the youthful Humboldt. They went to Belgium and to Holland, and thence to England, where Forster introduced him to Sir Joseph Banks. Thus the companions

of Capt. Cook in his first and second voyages round the world, who, already venerable in years and eminent as promoters of physical science not yet established in the popular favor, were the early guides of Humboldt in his aspirations for scientific distinction. Yet Humboldt had a worldly career to accomplish. He was to be a statesman, and this required that he should go to the Academy of commerce at Hamberg. He remained there five months, but he could endure it no longer, and he begged so hard that his mother allowed him to go to Freyberg and study geology with Werner, with a view of obtaining a situation in the administration of mines. See what combinations of circumstances prepare him for his great career, as no other young man ever was prepared. At Freyberg he received the private instruction of Werner, the founder of modern geology, and he had as his fellow student no less a man than Leopold von Buch, then a youth, to whom, at a later period, Humboldt himself dedicated one of his works, inscribing it "to the greatest geologist," as he was till the day of his recent death. From Freyberg he made frequent excursions to the Hartz and Fichtelgebirge and surrounding regions, and these excursions ended in the publication of a small work upon the Subterranean Flora of Freiberg (*Flora Subterranea Fribergensis*), in which he described especially those cryptogamous plants, or singular low and imperfect formations which occur in the deep mines. But here ends his period of pupilage.

In 1792 he was appointed an officer of the mines (*Oberbergmeister*). He went to Beyreuth as director of the operations in those mines belonging to the Frankish provinces of Prussia. Yet he was always wandering in every direction, seeking for information and new subjects of study. He visited Vienna, and there heard of the discoveries of Galvani, with which he made himself familiar; went to Italy and Switzerland, where he became acquainted with the then celebrated Professors Jurine and Pictet, and with the illustrious Scarpa. He also went to Jena, formed an intimate acquaintance with Schiller and Goethe, and also Loder, with whom he studied anatomy. From that time he began to make investigations of his own, and these investigations were in a line which he has seldom approached since, being experiments in physiology. He turned his attention to the newly discovered power by which he tested the activity of organic substances; and it is plain, from his manner of treating the subject, that he leaned to the idea that the chemical process going on in the living body of animals

furnished a clue to the phenomena of life, if it was not life itself. This may be inferred from the title of the book published in 1797—"Über die gereizte Muskel und Nerven-faser, mit Vermuthungen über den chemischen Process des Lebens, in Thieren und Pflanzen." In these explanations of the phenomena we have the sources of the first impulses in a direction which has been so beneficial in advancing the true explanation of the secondary phenomena of life, but which, at the same time, in its exaggeration as it prevails now, has degenerated into the materialism of modern investigators. In that period of all-embracing activity, he began to study astronomy. His attention was called to it by Baron von Zach, who was a prominent astronomer, and at that time was actively engaged upon astronomical investigations in Germany. He showed Humboldt to what extent astronomy would be useful for him, in his travels, in determining the positions of places, the altitude of mountains, &c.

So prepared Humboldt now broods over his plans of foreign travel. He has published his work on the muscular and nervous fibre, at the age of 28. He has lost his mother; and his mind is now inflamed with an ungovernable passion for the sight of foreign, and especially tropical lands. He goes to Paris to make preparation, by securing the best astronomical, meteorological and surveying instruments. Evidently he does not care where he shall go, for on a proposition of Lord Bristol to visit Egypt, he agrees to it. The war prevents the execution of this plan, and he enters into negotiations to accompany the projected expedition of Capt. Baudin to Australia; but when Bonaparte, bent on the conquest of Egypt, started with a scientific expedition, Humboldt wishes to join it. He expects to be one of the scientific party, and to reach Egypt by way of Barbary. But all these plans failing, he goes to Spain with the view of exploring that country, and finding perhaps some means of joining the French expedition in Egypt from Spain. While in Madrid he is so well received at the court—a young nobleman so well instructed has access every where—and he receives such encouragement from persons in high positions, that he turns his thoughts to an exploration of the Spanish provinces of America. He receives permission not only to visit them, but instructions are given to the officers of the colonies to receive him every where and give him all facilities, to permit him to transport his instruments, to make astronomical and other observations, and to collect whatever he chooses; and all that only in consequence of the good impression he has made when he appeared there, with no

other recommendation than that of a friend who happened to be at that time Danish minister to the court of Madrid. With these facilities offered to him, he sails in June 1799 from Corunna, whence he reaches Teneriffe, makes short explorations of that island, ascending the peak, and sailing straightway to America, where he lands in Cumana in the month of July, and employs the first year and a half in the exploration of the basin of the Orinoco and its connection with the Amazon. This was a journey of itself, and completed a work of scientific importance, establishing the fact that the two rivers were connected by an uninterrupted course of water. He established for the first time the fact that there was an extensive low plain, connected by water, which circled the high table land of Guiana. It was an important discovery in physical geography, because it changed the ideas about water courses and about the distribution of mountains and plains in a manner which has had the most extensive influence upon the progress of physical geography. It may well be said that after this exploration of the Orinoco, physical geography begins to appear as a part of science. From Cumana he makes a short excursion to Havana, and hearing there of the probable arrival of Baudin on the west coast of America, starts with the intention of crossing at Panama. He arrives at Carthagena, but was prevented by the advance of the season from crossing the Isthmus, and changed his determination from want of precise information respecting Baudin's expedition. He determines to ascend the Magdalena river and visit Santa Fé de Bogotá, where, for several months, he explores the construction of the mountains, and collects plants and animals; and, in connection with his friend, Bonpland, who accompanied him from Paris, he makes those immense botanical collections, which were afterwards published by Bonpland himself, and by Kunth after Bonpland had determined on an expedition to South America. In the beginning of 1802 he reaches Quito, where, during four months, he turns his attention to every thing worth investigating, ascends the Chimborazo, to a height to which no human foot had reached, any where; and, having completed this survey and repeatedly crossed the Andes, he descends the southern slope of the continent to the shore of the Pacific at Truxillo, and following the arid coast of Peru, he visits finally Lima. I will pass lightly over all the details of his journey, for they are only incidents in that laborious exploration of the country which is best appreciated by a consideration of the works which were published in consequence of the immense accumula-

tion of materials gathered during those explorations. From Lima, or rather from Callao, he sails in 1802 for Guayaquil and Acapulco, and reaches Mexico in 1803, where he makes as extensive explorations as he had made in Venezuela and the Andes, and after a stay of about a year, having put all his collections and manuscripts in order, revisits Cuba for a short time, comes to the United States, makes a hurried excursion to Philadelphia and Washington, where he is welcomed by Jefferson, and finally returns with his faithful companion Bonpland to France, accompanied by a young Spanish nobleman, Don Carlo de Montufar, who had shared his travels since his visit to Quito.

At thirty-six years of age Humboldt is again in Europe with collections made in foreign lands, such as had never been brought together before. But here we meet with a singular circumstance. The German nobleman, the friend of the Prussian and Spanish courts, chooses Paris for his residence, and remains there twenty-two years to work out the result of his scientific labor; for since his return, with the exception of short journeys to Italy, England and Germany, sometimes accompanying the king of Prussia, sometimes alone, or accompanied by scientific friends, he is entirely occupied in scientific labors and studies. So passes the time to the year 1827, and no doubt he was induced to make this choice of a residence by the extraordinary concourse of distinguished men in all branches of science, with whom he thought he could best discuss the results of his own observations. I shall presently have something to say about the works he completed during that most laborious period of his life. I will only add now, that in 1827 he returned to Berlin permanently, having been urged of late by the king of Prussia again and again to return to his native land. And there he delivered a series of lectures preparatory to the publication of *Cosmos*; for in substance, even in form and arrangement, these lectures, of which the papers of the day gave short accounts, are a sort of prologue to the *Cosmos*, and a preparation for its publication.

In 1829, when he was 60 years of age, he undertakes another great journey. He accepts the invitation of the Emperor Nicholas to visit the Ural mountains, with a view of examining the gold mines and localities where platina and diamonds had been found, to determine their geological relations. He accomplished the journey with Ehrenburg and Gustavus Rose, who published the result of their mineralogical and geological survey in a work of which Rose is the sole author; while Humboldt published under the title of

Asiatic Fragments of Geology and Climatology, his observations of the physical and geographical features made during that journey. But he had hardly returned to Berlin, when in consequence of the revolution of 1830, he was sent by the king of Prussia as extraordinary ambassador to France, to honor the elevation of Louis Philippe to the throne. Humboldt had long been a personal friend of the Orleans family, and he was selected as ambassador on that occasion on account of these personal relations. From 1830 to 1848 he lived alternately in Berlin and in Paris, spending nearly half the time in Paris and half the time in Berlin, with occasional visits to England and Denmark; publishing the results of his investigations in Asia, making original investigations upon various things, and especially pressing the establishment of magnetic observatories, and connected observations all over the globe, for which he obtained the co-operation of the Russian government and that of the government of England; and at that time those observatories in Australia and in the Russian empire to the borders of China, were established, which have led to such important results in our knowledge of terrestrial magnetism. Since 1848 he has lived uninterruptedly in Berlin, where he published on the anniversary of his 80th year a new edition of those charming first flowers of his pen, his *Views of Nature*, the first edition of which was published in Germany in 1808. This third edition appeared with a series of new and remodeled annotations and explanations; and that book in which he first presented his views of nature, in which he drew those vivid pictures of the physiognomy of plants and of their geographical distribution, is now revived and brought to the present state of science. The "*Views of Nature*" is a work which Humboldt has always cherished, and to which in his *Cosmos* he refers more frequently than to any other work. It is no doubt because there he had expressed his deepest thoughts, his most impressive views, and even foreshadowed those intimate convictions which he never expressed, but which he desired to record in such a manner that those that can read between the line might find them there; and certainly there we find them. His aspiration has been to present to the world a picture of the physical world, from which he would exclude every thing that relates to the turmoil of human society, and to the ambitions of individual men.

A life so full, so rich, is worth considering in every respect, and it is really instructive to see with what devotion he pursues his work. As long as he is a student he is really a student and learns faithfully, and learns every thing he can

reach. And he continues so for twenty-three years. He is not one of those who is impatient to show that he has something in him, and with premature impatience utters his ideas, so that they become insuperable barriers to his independent progress in later life. Slowly and confident of his sure progress, he advances, and while he learns he studies also independently of those who teach him. He makes his experiments, and to make them with more independence he seeks for an official position. During five years he is a business man, in a station which gives him leisure. He is superintendent of the mines, but a superintendent of the mines who can do much as he pleases; and while he is thus officially engaged journeying and superintending, he prepares himself for his independent researches. And yet it will be seen he is thirty years of age before he enters upon his American travels, those travels which will be said to have been the greatest undertaking ever carried to a successful issue, if judged by the results; they have as completely changed the basis of physical science as the revolution which took place in France about the same time has changed the social condition of that land. Having returned from these travels to Paris, there begins in his life a period of concentrated critical studies. He works up his materials then with an ardor and devotion which is untiring; and he is not anxious to appear to have done it all himself. Oltmanns is called to his aid to revise his astronomical observations, and his barometrical measurements, by which he has determined the geographical position of 700 different points, and the altitude of more than 450 of them.

The large collection of plants which Bonpland had begun to illustrate, but of which his desire of seeing the tropics again has prevented the completion, he entrusts to Kunth. He has also brought home animals of different classes, and distributes them among the most eminent zoologists of the day. To Cuvier he entrusts the investigation of that remarkable batrachian, the *æcolotel*, the mode of development of which is still unknown, but which remains in its adult state in a condition similar to that of the tadpole of the frog during the earlier period of its life. Latreille describes the insects, and Valenciennes the shells and the fishes; but yet to show that he might have done the work himself, he publishes a memoir on the anatomical structure of the organs of breathing in the animals he has preserved, and another upon the tropical monkeys of America, and another upon the electric properties of the electric eel. But he was chiefly occupied with investigations in physical geography

and climatology. The first work upon that subject is a dissertation on the geographical distribution of plants, published in 1817. Many botanists and travelers had observed that in different parts of the world there are plants not found in others, and that there is a certain arrangement in that distribution; but Humboldt was the first to see that this distribution is connected with the temperature of the air as well as with the altitudes of the surface on which they grow, and he systematized his researches into a general exposition of the laws by which the distribution of plants is regulated. Connected with this subject he made those extensive investigations into the mean temperature of a large number of places on the surface of the globe, which led to the drawing of those isothermal lines so important in their influence in shaping physical geography and giving accuracy to the mode of representing natural phenomena. Before Humboldt we had no graphic representation of complex natural phenomena which made them easily comprehensible, even to the minds of moderate cultivation. He has done that in a way which has circulated information more extensively, and brought it to the apprehension more clearly than it could have been done by any other means.

It is not too much to say, that this mode of representing natural phenomena has made it possible to introduce in our most elementary works, the broad generalizations derived from the investigations of Humboldt in South America; and that every child in our schools has his mind fed from the labors of Humboldt's brain, wherever geography is no longer taught in the old routine. Having completed his American labors, Humboldt published three works partly connected with his investigations in America, and partly with his further studies in Europe since his return, and among others, a book, which first appeared as a paper in the "*Dictionnaire des Sciences Naturelles*," but of which separate copies were printed under the title of "*Essai sur la Constitution des Roches dans les deux Hemisphères*." This work has been noticed to the extent which it deserved by only one geologist, Elie de Beaumont. No other seems to have seen what there is in that paper, for there Humboldt shows, for the first time, that while inorganic nature is the same all the world over,—granite is granite, and basalt is basalt, and limestone and sandstone, limestone and sandstone wherever found,—there is every where a difference in the organized world, so that the distribution of animals and plants represents the most diversified aspects in different countries. This at once explains to us why physical sciences may make such rapid

progress in new countries, while botany and zoology have to go through a long process of preparation before they can become popular in regions but recently brought under the beneficial influence of civilization. For while we need no books of our own upon astronomy, chemistry, physics and mineralogy, we have to grope in the dark while studying our plants and animals, until the most common ones become as familiar to us as the common animals of the fields in the old countries. The distinction which exists in the material basis of scientific culture in different parts of the world, is first made evident by this work. By two happily chosen words Humboldt has presented at once the results of our knowledge in geology at the time, in a most remarkable manner. He speaks there of "independent formations." Who, before Humboldt, thought there were successive periods in the history of our globe, which were independent one from the other? There was in the mind of geologists only a former and a present world. Those words expressing the thought, and expressing it in reference to the thing itself, for the first time occur in that memoir; thus putting an end to those views prevailing in geology, according to which the age of all the rocks upon the earth can be determined by the mineralogical character of the rocks appearing at the surface. The different geological levels at which rocks belonging to the same period have been deposited, but which have been disturbed by subsequent revolutions, he happily designated as "geological horizons."

It was about the time he was tracing these investigations that he made his attempt to determine the mean altitude of the continents above the sea. Thus far geographers and geologists had considered only the heights of mountain chains, and the elevation of the lower lands, while it was Humboldt who first made the distinction between mountain chains and table lands. But the idea of estimating the average elevation of continents above the sea had not yet been entertained; and it was again Humboldt, who, from the data that he could command, determined it to be at the utmost 900 feet, assuming all irregularities to be brought to a uniform level. His Asiatic travels gave him additional data to consider these depressions and swellings of continents, when discussing the phenomena of the depressions of the Caspian sea, which he does in a most complete manner.

There is a fullness and richness of expression and substantial power in his writing, which is most remarkable, but which renders his style somewhat involved. He has aimed to present to others what nature presented to him—combi-

nations interlocked in such a complicated way as hardly to be distinguishable, and his writings present something of the kind. You see his works, page after page, running into volumes without division into chapters or heads of any sort; and so conspicuous is that peculiarity of style in his composition, that I well remember hearing Arago turning to him, while speaking of composition, and saying, "Humboldt, you don't know how to write a book—you write without end, but that is not a book; it is a picture without frame." Such an expression of one scientific man to another, without giving offence, could only come from a man so intimately associated as Arago was with Humboldt. And this leads me to a few additional remarks upon his character and social relations. Humboldt was born near the Court.* He was brought up in connection with courtiers and men in high positions of life. He was no doubt imbued with the prejudices of his caste. He was a nobleman of high descent. And yet the friend of kings was a bosom friend of Arago, and he was the man who could, after his return from America, refuse the highest position at the court of Berlin, that of the secretaryship of public instruction, preferring to live in a modest way in Paris, in the society of all those illustrious men who then made Paris the centre of intellectual culture. It was there where he became one of that *Société d'Arcueil*, composed of all the great men of the day, to which the paper on "Isothermal Lines" was presented, and by which it was printed, as all papers presented to it were, for private distribution. But from his intimate relations especially to the court of Prussia, some insinuations have been made as to the character of Humboldt. They are as unjust as they are severe in expression. He was never a flatterer of those in power. He has shown it by taking a prominent position, in 1848, at the head of those who accompanied the victims of the revolution of that year to their last place of rest. But while he expressed his independence in such a manner, he had the kindest feelings for all parties. He could not offend, even by an expression, those with whom he has been associated in early life; and I have no doubt that it is to that kindness of feeling we must ascribe his somewhat indiscriminate patronage of aspirants in science, as well as men who were truly devoted to its highest aims. He may be said to have been, especially in his latter years, the friend of every cultivated man, wishing to lose no opportunity to do all the good of which he was capable; for he had a degree of benevolence and generosity which was unbounded. I can well say that there is

not a man engaged in scientific investigation in Europe; who has not received at his hands marked tokens of his favor, and who is not under deep obligations to him. May I be permitted to tell a circumstance which is personal to me in that respect, and which shows what he was capable of doing while he was forbidding an opportunity of telling it. I was only 24 years of age when in Paris, whither I had gone with means given to me by a friend; but was at last about to resign my studies from want of ability to meet my expenses. Professor Mitscherlich was then on a visit in Paris, and I had seen him in the morning, when he had asked me what was the cause of my depressed feelings; I told him that I had to go, for I had nothing left. The next morning as I was seated at breakfast in front of the yard of the hotel where I lived, I saw the servant of Humboldt approach. He handed me a note, saying there was no answer and disappeared. I opened the note, and I see it now before me as distinctly as if I held the paper in my hand. It said:

“My friend, I hear that you intend leaving Paris in consequence of some embarrassment. That shall not be. I wish you to remain here as long as the object for which you came is not accomplished. I enclose you a check for £50. It is a loan, which you may repay when you can.”

Some years afterwards, when I could have repaid him, I wrote, asking for the privilege of remaining forever in his debt, knowing that this request would be more consonant to his feelings than the recovery of the money, and I am now in his debt. What he has done for me, I know he has done for many others, in silence and unknown to the world. I wish I could go on to state something more of his character, his conversational powers, &c., but I feel that I am not in a condition to speak of them. I would only say that his habits were very peculiar. He was an early riser, and yet he was seen at late hours in the saloons in different parts of Paris. From the year 1830 to 1848, while in Paris, he had been charged by the king of Prussia to send reports upon the condition of things there. He had before prepared for the king of Prussia a report on the political condition of the Spanish colonies in America, which no doubt had its influence afterwards upon the recognition of the independence of those colonies. The importance of such reports to the government of Prussia may be inferred from a perusal of his political and statistical essays upon Mexico and Cuba. It is a circumstance worth noticing, that above all great powers, Prussia has more distinguished, scientific and literary men among her diplomatists than any other state. And so was

Humboldt actually a diplomatist in Paris, though he was placed in that position, not from choice, but in consequence of the benevolence of the king, who wanted to give him an opportunity of being in Paris as often and as long as he chose.

But from that time there were two men in him—the diplomatist, living in the Hotel des Princes, and the naturalist, who roomed in the Rue de la Harpe, in a modest apartment in the second story, where his scientific friends had access to him every day before seven. After that he was frequently seen working in the library of the institute until the time when the grand seigneur made his appearance at the court or in the saloons of Paris.

The influence he has exerted upon the progress of science is incalculable. I need only allude to the fact that the *Cosmos*, bringing every branch of natural science down to the comprehension of every class of students, has been translated into the language of every civilized nation of the world, and gone through several editions. With him ends a great period in the history of science—a period to which Cuvier, Laplace, Arago, Gay-Lussac, Decandolle and Robert Brown belonged, and of whom only one is still living—the venerable Biot.

VARIETIES.

Medical News and Items.

REINTERMENT OF THE REMAINS OF JOHN HUNTER.—The coffin of John Hunter was recently discovered in the disinterment of bodies from St. Martin-in-the-Fields, and buried in Westminster Abbey. The *Medical Times and Gazette* gives the following interesting sketch of the ceremonies on that occasion:

“As public notice had been given that the reinterment would take place in the Abbey on Monday after the afternoon service, and that an appropriate anthem would be given, an unusually large congregation had assembled, and great numbers of medical men attended in addition to those who had obtained tickets at the college. There was no funeral service, but the words of the anthem were peculiarly appropriate: ‘When the ear heard him, then it blessed him; when the eye saw him, it gave witness to him; he delivered the poor that crieth, the fatherless, and him that hath none to help him. . . . His body is buried in peace; his name liveth evermore.’ While the service was proceeding, the

council of the college and many gentlemen invited to join in the ceremony, assembled in the Jerusalem chamber, the room in which Henry the Fourth died, after having been brought there from the confessor's shrine in the Abbey in a fit of apoplexy. There were those present who recalled the words of the dying king, as embalmed by Shakspeare in his historical play, and of Congreve and Addison lying in state in the same room before their interment in the Abbey, so well described by Goldsmith as 'the place of sepulture for the philosophers, heroes and kings of England'—and there was a general feeling of pride on the occasion of adding the remains of one of England's greatest medical philosophers to the dust of his fellows; especially as our profession is not rich in associations with Westminster Abbey. Mead, Friend and Baillie—with the exception of Buchan, of 'Domestic Medicine' renowned—were the only medical men, before Hunter, entombed within its precincts.

When the service was over, the procession was thus arranged, following the coffin, which was carried on a high bier: The Dean of Westminster; Mr. Baillie, a grand nephew of Hunter; the Earl of Ducie, and Dr. Clarke of Cambridge, as trustees of the Hunterian museum; Mr. Buckland and Professor Owen; the presidents of the Colleges of physicians and surgeons, the council and professors of the College of surgeons, the censors of the College of physicians, the master and warden of the Apothecaries' company, the presidents of several of the learned societies, the medical officers of London and provincial hospitals, and many visitors. While the dead march in Saul resounded from the organ, the procession proceeded round the Abbey, through lines of spectators, and returned to a grave opened on the north side of the nave, near the western end. Here the coffin was lowered amid a great concourse, and many present obtained their first glimpse of it. It was extremely well preserved. On a brass plate, with the family arms, was inscribed, 'John Hunter, Esq. died 16th October 1793, aged 64 years.' Beneath this plate the college had another affixed, with the inscription, 'These remains were removed from the church of St. Martin-in-the Fields, by the Royal college of surgeons of England, March 21st, 1859.' In opening the grave for Hunter, the bones of Ben Jonson were exposed, and a skull was freely handled about, said to be that of 'Rare Ben;' but we did not learn that the truth of the story of the poet being buried standing on his feet was confirmed. However this may be, the poet and the great surgeon, physiologist and naturalist rest at last side by side, close to Gifford, who rescued Jonson's memory from unmerited obloquy, and another is added to the rich associations of our national mausoleum. In its aisles and chapels sleep our kings and queens. Elizabeth in the same sepulchre with her victim, the Scottish Mary; the descendants of Robert Bruce by the side of the first Edward; Pitt within a yard of Fox.

'How peaceful and how powerful is the grave,
Which hushes all!'

DEATH FROM EATING HOLLY-BERRIES.—A death from this cause is reported in the case of a little boy at Northam. Severe sickness and other symptoms of irritant poisoning were present. Mr. Harris, surgeon, testified at the inquest that the berries had produced violent inflammation of the intestines, and caused death. Verdict in accordance.—*Med. Times.*

VIRGINIA MEDICAL JOURNAL.

SEPTEMBER 1859.

ART. I.—*On Diphtheria.* By THOMAS POLLARD, M. D.,
Richmond, Va.

THE writer's attention has been called to the subject which heads this article, from the fact that several cases of diphtheria have lately come under his notice. He feels inclined to record the result of his observation and reflection on this disease, as it is yet a new one to many practitioners; and crude opinions are, it is believed, still entertained by many regarding its nature and treatment. No doubt some, as in former times, still confound it under other names of "putrid sore throat," "black tongue," or "malignant sore throat."

Bretonneau first accurately described this affection in a monograph published in 1826; and until this time it was practically unknown to modern physicians. He believed it may be traced back to remote antiquity, and thinks it was first known as "*malum egyptiacum*." Areteus, who wrote about the beginning of the first century, gives a description of this "*malum egyptiacum*," in which he says the tonsils are covered with "*quodam concreto humore albo*," which is said to spread over the tongue and gums—"linguam etiam occupat, et gingivas."*

Since Bretonneau's monograph, many epidemics of this

* Vid. *Lancet*, March 1859, p. 203.

disease have prevailed in France, and been closely observed by different writers. A severe epidemic occurred in France and Paris in 1855, of which the well known author and medical man, Valleix, died. From 1855 to 1857 there were 366 deaths from this disease, and of these 341 were under the age of 10. At San Francisco in 1856, it was very destructive, few children who were attacked recovering. In England in the last year or two (1857 and 1858) it has become very prevalent, one practitioner treating as many as 300 cases within a few months—and the English medical journals are filled with accounts of it. In this country, with the exception of the epidemic which prevailed at San Francisco, the disease has not been very prevalent, though an epidemic of it is described by Dr. Baird as having prevailed in New York in 1771. He calls it “suffocative anguia,” but distinguishes it from “gangrenous sore throat,” and speaks of the pseudo membranous patches being the result of a concretion; and in 1831 Dr. Bell speaks of having witnessed this affection, in epidemic form, in Philadelphia. It occurs in this country in sporadic form, not unfrequently, and often spreads through the children in a family or a school, without seeming to be contagious. The disease is the more interesting to us, from the fact that it is getting to be more frequent than formerly; and there is no reason to expect that we shall be exempt from epidemic and contagious forms of it.

The name given to this disease was applied by Bretonneau, and means skin or membrane. The seat of the affection is in the fauces and tonsils, from which it not unfrequently dips into the larynx and trachea, and ascends to the nasal passages. It usually begins with some redness in the fauces and on the tonsils, such as we see in ordinary sore throat; and this is soon followed by the exudation, probably in less than a day. When first noticed, the surface exhibits a small yellowish white or ash-colored patch or patches—for there may be only one—and then again it may be spread over the whole surface. These patches resemble the surface of

ulcers or superficial sloughs, for the former of which they have often been mistaken. The membrane is various, being either soft or dense or tough, and is either albuminous or fibrinous, though it is said to be usually albuminous, and perhaps never capable of organization. It lies beneath the epithelium, and the surface of the natural tissue of the part has not necessarily undergone any change of substance, though sometimes it does, as is seen when the patches of membrane are removed. Dr. Harley (Med. Times and Gazette, February 1859) says, from a careful examination of these structures he had come to the conclusion that they were not fibrinous membranes, but rather layers of coagulated mucus mixed with epithelial scales, gradually concretizing and solidifying into tubes and casts. The severity of the attack is proportioned to the quantity of the membrane formed and the disposition to extend. When mild, the patches are few, not disposed to spread, and there is little or no fever. When severe, it spreads rapidly in some cases, in a few hours covering the whole fauces; and then there is usually a considerable external swelling. The deglutition is often difficult, and the fluid may flow through the nose in the attempt to swallow. The patches, after a little while, begin to be removed, either separating in strips, or softening, and mixing with the fluids of the mouth, and sometimes disappearing by absorption. They are apt, however, to re-form, occasionally separating and re-forming several times, though generally they are thinner each time, until in some cases nothing is left but an ulcer with suppuration. The symptoms of this affection are often insidious, and the child is sometimes seriously affected before any disease is suspected. It may run about and appear cheerful for several days after the membrane commences to form.

There are three forms of diphtheria encountered by the practitioner: 1. Simple diphtheria. 2. Croupal diphtheria. 3. Malignant diphtheria.

In the *simple* variety, there is fever, headache, coated tongue, slight difficulty, or perhaps no difficulty in degluti-

tion. One or both tonsils are covered by a small patch of white membrane. It may cover the whole soft palate, the pharynx being rarely involved. The glands about the neck in this form are but little swollen. The duration is from 5 to 9 days, and the prognosis is favorable. This form may sometimes run into the graver forms.

The second or croupal variety is more severe, and causes many deaths. It occurs particularly in children. There is active fever, headache, hot skin, enlargement of the cervical glands, and difficulty of swallowing. This form is apt to extend very soon to the larynx and trachea, and then a hoarse, barking, croupy cough, with paroxysms of suffocation and loss of voice supervene. The child may expel the membrane and recover, but generally it dies.

The third form (the malignant diphtheria) is usually fatal. In this variety there is marked heat of skin, frequent pulse (which is mostly feeble), headache, vomiting, thickly coated tongue, and occasionally a sudden flow from the nose, of offensive mucus and pus, or hemorrhage from the nose, mouth or bowels. The throat becomes painful, deglutition difficult, and considerable swelling sometimes occurs of the submaxillary, parotid and cervical glands. This swelling is often very great. A foetid odor, exceedingly offensive, soon exhales from the portion of the throat covered by the membrane, and from the nasal passages, to which the disease has extended itself. Great prostration soon occurs; the pulse grows feeble; the surface cool; the face livid; and perhaps coma comes on. If death occurs, the patient dies in a somnolent, quiet way, from asthenia, which is in striking contrast to the agitation and dyspnoea and suffocation which closes the scene in the croupal variety.

In all forms of the complaint, want of appetite is a very striking characteristic. In the worst forms, the child absolutely refuses nourishment, and it becomes necessary to support the strength by nutritious enemata. In some instances, as a secondary symptom, *paralysis* of the *soft palate* is found to exist. This is manifested by incapacity for suction and

regurgitation of liquids. *General paralysis*, or hemiplegia, and other forms of paralysis, are other symptoms sometimes noticed, and is supposed to be due to the toxic action of the diphtheritic poison in the blood. An evidence of this is, that sometimes the paralysis is more or less general, a case being related in the *Lancet* by Dr. Kingsford, where there was loss of voice, of deglutition, partial loss of sight and paralysis of *both* arms. M. Trousseau and other French authors relate such cases. This disease has recently prevailed to a considerable extent at Shirley on the James river, the residence of Mr. Hill Carter. About 30 cases occurred, of which two proved fatal. One of the patients, a boy about 18 years of age, was hemiplegic, and died. It is presumed most of the cases were of the mild form. Severe otalgia, amaurosis and diphtheritic ophthalmia are spoken of by authors as other symptoms springing up in diphtheria.

It will not be inappropriate here to detail some instances of this disease, illustrating the three forms spoken of.

CASE I.—*Simple diphtheria*.—Infant of Mr. F., aged 12 months. This was the third case of the disease occurring in the family, and is first related, because it was of the simple variety. The child was observed to have some difficulty of swallowing, and on inspecting the throat, a spot of white diphtheritic membrane, the size of a ten cent piece, was discovered on one side of the fauces. Fever very slight; tongue slightly coated. On consultation with Dr. Cunningham, who was attending the family with me, it was determined to give the child 10 grs. of calomel, and apply a 60 grain solution of nitrate of silver to the throat. This was April 23d, 1859.

April 24th.—The throat improved—the patch still adherent in part, but separated at the edges. Reapply nit. argent. to throat; calomel, 3 grs. every 5 hours, with 1 drop of laudanum, to prevent its acting too much, which it seemed inclined to do. Child nurses some, though indifferently.

25th.—The membrane separated, with very thin deposit

re-forming. Reapply nit. argent.; 3 grs. calomel, with 1 drop of laudanum, every 8 hours.

26th.—Throat much better; a pit left where the membrane had been, showing there had been some loss of substance in this case; appetite better; leave off calomel; re-apply nit. argent.

27th.—Child still improving; leave off treatment, except some powdered alum once a day to the fauces by means of a small mop.

CASE II.—*Croupal diphtheria*.—Was called on April 15th to see Emma F., aged 5, a healthy, well developed child, sister to CASE I, who was also a healthy child. This was the first case occurring in the family. Found all the glands about the throat swollen, more particularly the parotid glands; considerable dyspnœa, with general uneasiness, with high fever and furred tongue. On examining the throat, found the tonsils very much swollen, and concluded I had before me only a case of tonsillitis, as no false membrane was visible. Ordered 8 grs. of calomel, to be followed in 6 hours with castor oil, with a stimulating liniment to throat, and pulv. alum to the tonsils.

16th.—Symptoms no better; dyspnœa rather increased; examined the throat; no membrane visible; medicine acted well; directed 3 grs. of calomel every 6 hours; nit. argent. 30 grs. to the oz. applied to the throat by mop; blister on each side of the throat over the tonsils, to be followed with poultice.

17th.—Child no better; on examining the throat, found a patch of false membrane on each tonsil, larger than a 12½ cent piece; applied solid nitrate of silver to the throat, and ordered 3 grs. of calomel every 4 hours; entire loss of appetite, and difficulty of swallowing, with considerable dyspnœa.

18th.—No better; dyspnœa and loss of voice increased; membrane spreading over entire throat, and some vomiting; applied nit. argent., 60 grs. to the oz. to the throat by mop;

continue calomel, and give the child rich soup, beef tea and a little milk toddy.

20th.—Child growing worse ; offensive discharge from the nostrils ; membrane separated at some points, but re-forming, and increasing at other points ; found it very difficult to get the child to take nourishment ; frequent vomiting ; the green "spinach passages" made their appearance on yesterday, and calomel suspended to-day ; some hemorrhage from the throat where membrane is detached ; pulse feeble, and surface cool ; some croupy cough, and respiration ; reapply nit. agent. to throat, and use powdered alum in the evening ; blister not very sore, and healing ; nutritious enemata by the bowels.

22d.—Child continued to grow worse ; hemorrhage occurred from the gums ; discharge increased from the nose, and was very offensive. Enemas, containing beef tea and milk toddy, were ordered, as the child would take no nourishment ; but it continued to go down, and died during the night.

This case partook of the *malignant* as well as of the *croupal* variety. It is probable the membrane commenced forming in the larynx in the beginning of this case, as there was dyspnoea from the commencement, with some affection of the voice, and spread up to the fauces. The dyspnoea I supposed was produced by the great swelling of the tonsils, which nearly touched—but I now think there was probably a patch of the membrane in the larynx, of greater or less size, from the beginning ; or very possibly, the membrane, in small amount, may have existed posterior to the tonsils, and a view of it was prevented by their swelling ; or it may be, that the membrane did not commence to form until the night before I saw it, as the swelling sometimes precedes the membrane. Death occurred partly from asphyxia and partly from asthenia.

CASE III.—*Malignant diphtheria*.—Clara F., aged 8 years, was observed to be complaining on the 17th April. On examining the throat, the diphtheritic membrane was dis-

covered in the fauces, of the size of a 25 cent piece. It was now recollected she had been unwell for several days, though was still going about at the time the membrane was discovered, and did not seem much sick; looked depressed, with not much appetite, and slight fever; constitution delicate; applied nitrate of silver, 60 grs. to the oz., to the fauces, and directed 3 grs. of calomel three times a day. This treatment was kept up until the "green spinach passages" were produced, and the nitrate of silver was daily applied. The symptoms grew worse; the membrane extended, and ultimately reached a small portion of the nasal passages. The discharges were offensive, with some bleeding from the fauces, with diarrhoea and vomiting.

April 23d.—We determined (Dr. Cunningham attended this as well as the other children with me), in view of the prostration of the patient, to leave off the calomel, which had produced some of the characteristic green evacuations, and to give elixir vitriol, and sustaining treatment, soups and milk toddy. The appetite, however, was entirely gone, and we found it almost impossible to get the child to take any nourishment.

25th.—The symptoms grew worse until to-day, when the child died quietly from asthenia. The skin had grown cold for a day or two; the pulse more feeble; the patient listless and inattentive; and in spite of stimulants, these symptoms increased in gravity.

I have called this case *malignant*, because the system seemed to sink purely from the *blood poisoning*. There was no extension of it to the air passages, and not much to the nasal membrane. The false membrane was detached in some points, but re-formed, and extended to other parts of the fauces. The breathing was quiet all the time.

CASE IV.—*Simple diphtheria*.—I was called to see a servant girl of Mr. C., aged twelve, of good constitution, and previously healthy. This was on the 20th of July 1859.

I was told that the girl had been complaining of sore throat for a day or two, and swallowed with difficulty. On looking into the throat, I discovered the uvula and one side of the throat covered with diphtheritic membrane; tongue furred; slight fever, with uneasy expression of face, and entire loss of appetite; ordered $2\frac{1}{2}$ grs. of calomel three times a day, and 20 drops of tinct. chloride of iron three times a day; in the intervals, milk and soup diet; having no solution of nitrate of silver, touched the throat with the solid nitrate; no swelling externally.

July 21st.—Some of the deposit on the throat seemed disposed to separate, but it had extended to the other side of the fauces; not so much pain in swallowing; no action from the bowels; ordered 10 grs. of calomel, and mopped the throat with a 60 gr. solution of nitrate of silver, and directed powdered alum to be applied in the evening.

22d.—Membrane separated in some places; says the throat feels better, and swallows better; calomel acted three times; where the membrane is off, unhealthy ragged looking ulcers are left; directed calomel to be left off; re-apply solution of nitrate of silver; give 10 grs. chlorate of potassa three times a day in place of the calomel; continue the iron; apply the alum to throat in the evening; fever very slight; observed occasional intermission in the pulse; good diet.

23d.—Continue treatment; throat improving; membrane nearly all detached; appetite returning.

24th.—Improving; continue treatment.

26th.—Throat nearly well; an ulcer left on the uvula, and on one side of the throat membrane all gone; directed the powdered alum once a day to the throat, and to continue the iron and chlorate of potassa for a few days longer.

It will be observed that calomel was sparingly given in this case. I had become convinced that the supporting treatment was the proper one for diphtheria, and that calomel should not be given as the principal remedy. I gave it

in the beginning, because the tongue was furred and the bowels rather confined. It is quite probable the patient would have done as well without it.

The *causes* of diphtheria are obscure. Cold seems to excite it. What predisposes to it, is difficult to say. It is evidently a blood disease in the bad form—the croupal and malignant varieties. The fact that any sore about the body in those suffering from this complaint, is apt to take on this false membrane, is evidence of contamination of the blood. It is known that a sore or excoriation or blister is frequently found coated with diphtheritic deposit. Another evidence of the blood poisoning is the disposition to hemorrhage which occurs, particularly in the low forms.

The disease, as has been mentioned, frequently spreads through all the children of a family or a boarding school. In this instance, what has produced it in one, may produce it in others, without contagion. Nevertheless, the malady is sometimes contagious in the severe forms.

M. Herpin, surgeon to the hospital at “Tours,” in mopping the throat of a child with diphtheria, received some of the matter in his face, and a portion lodged in the aperture of the nostril, which he neglected to wipe away at the time. He contracted the disease; the membrane spread over the nasal passages and pharynx; and though he recovered, his convalescence occupied more than six months.

Another French physician, Dr. Gerndon, received on his lips a portion of diphtheritic matter, contracted the disease, and came near dying.

A boy with frostbite of the foot, used a bath which had been used for a diphtheritic patient at the “Ecole Militaire,” where this disease existed, and his great toe became the seat of diphtheria.

Another instance is recorded, of a man who used a spoon which had been used by another with diphtheria, and contracted the disease.

Some attempts have been made in Paris to inoculate the disease; which have thus far failed. But there is no doubt

of the contagious nature of this affection in its epidemic form. And this fact teaches the propriety of isolating children who are affected with it.

Dr. Laycock (in the *Med. Times and Gaz.*) maintains that this is due to the presence of a parasitic fungus (*oidium albicans*) on the surfaces of the mouth, fauces and mucous surfaces. In a debate before the Medical society of London (*Med. Times and Gaz.* Feb. 1859), Drs. Harley and Rogers say that they have discovered this parasite in some cases, but that it was not essential to the disease, as in many well marked cases they had carefully examined with the microscope, and could find no trace of it.

The editor of the *Lancet* (October 1858) says it is a form of malignant scarlet fever, attacking feeble subjects living in bad air, and that the poison is not eliminated by the skin.

Albumen has been observed frequently to exist in the urine of persons with diphtheria—and Dr. Wade, “physician to the general dispensary,” London, in a monograph on this disease, says, in no fatal case has he failed to detect albumen since he has been aware of its existence.

This disease occurs at all times of life, but is most usual in infancy and early childhood, and rare in the old.

Bretonneau says, Gen’l Washington died of diphtheria, and not laryngitis proper. Upon what authority he makes the statement, I am not informed. It does not seem probable, from the short duration of the attack, as Washington was taken sick on the 13th December, and died on the night of the 14th, in less than 48 hours from the time he perceived any soreness of throat or evidence of cold. Some cases have recently terminated fatally in England in 48 hours, though such instances are very rare.

The only diseases with which diphtheria is liable to be confounded, are croup and laryngitis. The *locality* of the affections is different. The former commences in the trachea or larynx, while the latter begins in the fauces and tonsils.

As already said, the diphtheritic membrane may extend to the air passages, or the croupal membrane may extend to

the fauces. In diphtheria, difficulty of deglutition is one of the first signs of the affection, while stridulous voice, and dyspnœa, mark the access of croup or laryngitis.

The membrane in croup is firmer, and more disposed to organize, and the symptoms are more sthenic. In diphtheria the membrane is softer, disposed to break down and putrefy, and the symptoms are usually of low grade, and typhoid. There is more apt to be diarrhœa, and hemorrhage, and the odor in diphtheria is very offensive when the disease is severe, which it never is in croup. The affection too in diphtheria extends very often to the nasal passages, which it never does in croup.

Treatment.—In the simple form of this affection, little more seems necessary than local treatment, which should be nit. argent. 60 grs. to the oz. applied by mop once a day. If there be much fever and good pulse, a mercurial purgative had best be administered. If there are any signs of depression, tonics, particularly tinct. chloride of iron, in doses of 10 to 20 drops, should be given every four hours, and with this, nourishing diet. In the croupal variety, which is very apt also to be malignant, with adynamic tendency, and in the malignant form, the treatment must be supporting, not depleting. There can be no doubt that in severe cases, the tendency is to depression, and death by asthenia, unless the termination should sooner take place by asphyxia. Those who have observed this disease mostly in Europe, have come to the conclusion that the grave cases are instances of blood poisoning, and compare the progress and nature of diphtheria to scarlatina or erysipelas. The mild cases will recover under almost any treatment, they say, so the throat is treated locally, by nitrate of silver, or pure hydrochloric acid. Bleeding was formerly used in this affection, but is now almost entirely abandoned. One physician in France who tried bleeding extensively, lost *sixty cases* out of *sixty*—a pretty good evidence of the adynamic character of this affection.

At one time *mercury* was considered the all important

remedy in this disease. This treatment was first used by the English practitioners, and highly lauded, and was followed by the French. Both have now abandoned it, with perhaps a few exceptions. We would not, a priori, conclude that mercury was the remedy for diphtheria, if the constitution of the membrane is *albuminous*, not *fibrinous*, as is said to be the fact. The membrane is not capable of organization; the inflammation is not adhesive in its character; the pulse is rarely tense or full, or the symptoms sthenic. On the other hand, the severe cases are attended with depressed pulse, cool skin very often, disposition to vomiting and diarrhœa, putrid discharges from the throat and nose, and hemorrhages. Even where the symptoms do not show decided debility, we often see this hemorrhagic tendency whenever a portion of the membrane is detached.

In the cases detailed, mercury was more freely used than I should again think proper, under like circumstances. This was done under the prevailing idea of treatment proper for this affection in this country. As seen here, many of the cases (most of them indeed) are of simple form, and would bear mercury and recover, without proving, however, the efficacy of the remedy. This treatment was once popular in England; then in France; and the medical mind must go through the same experience in this country, and come to the same conclusion it has elsewhere. The "green spinach" discharges of the mercury were produced in the two fatal cases recorded, without the least improvement in the symptoms, but the reverse. For there was reason to fear that the remedy contributed to the hemorrhagic tendency, and the putrid discharges, and diarrhœa, and depression.

In the croupal and malignant form, then, I should not again think of giving calomel, but would resort early to tinct. chloride of iron in free doses, and nourishing diet, as far as the patient could be made to take it. Besides this, the chlorate of potassa should be administered, from its known antiseptic tendency. There is probably no incompa-

tibility with the chloride of iron, but I prefer giving them separately. If the pulse flags at all, or the surface is cool, milk toddy should early be resorted to.

The *local* treatment in diphtheria is of the greatest importance. We are strangely told by some medical men that the local applications are of no importance in this affection, as it is a constitutional malady. Do the same gentlemen abstain from local treatment in syphilis, or carbuncle, or scrofulous sores, or ulcerated sore throat with fever? We do not know that diphtheria, when it first appears, particularly in the simple variety, is a general malady. There is often no fever then, and it may be that absorption of pus or other matter from the local affection may make it constitutional. Dr. Gazailhan regards the affection as a *local* one in the beginning, which with extreme rapidity produces *general intoxication*. (L'Abeille Médicale, 23d May 1859.) If we can destroy one patch of the membrane by local applications, while we give constitutional remedies, how can we know that there will be further deposit of it? If there is not, we may prevent its spreading to the air passages, and thus preserve life. The local application most to be relied on is nit. argent, 60 grs. to the oz. by means of sponge or camel hair brush, if there is disposition to hemorrhage, or hydrochloric acid. Alum and sulph. zinc have been also recommended. It may be well to use the alum powdered, once a day, while the nitrate of silver is also used once a day. No external local application seems to do much good.

When the membrane reaches the air passages, emetics must be given occasionally, to aid in the expulsion of the membrane. They also assist in expelling the mucus, and relieving in some measure the dyspnoea. When the membrane extends to the nasal passages, injections of warm water and soap must be thrown up, and then an injection of nitrate of silver or sulphate of zinc; and to remove the offensive odor and cleanse the part, solution of chloride of soda, one part to eight, is very useful.

Where other means fail, and the patient in the croupal form is dying from apnœa, tracheotomy is justifiable, and must be resorted to, and has sometimes proved successful.

In addition to what has been said on the treatment of this affection, it may not be inappropriate to give a summary of the treatment recommended by some of the leading medical men in Europe, as gathered from the journals recently published.

The "Lancet sanitary committee," who make a long report in several of the numbers of the *Lancet* for the present year, recommend the *tonic* treatment, tinct. chloride of iron, chlorate of potassa, and nitrate of silver, 30 to 60 grs. to the oz., or muriatic acid, as the local treatment.

Mr. Ranking (*Lancet*, May 1859) recommends the tinct. chloride of iron, 15 to 20 drops every 3 hours, and the same preparation to be locally applied, with nourishing diet.

Mr. Lambden (*Lancet*, Nov. 1858) uses nitrate of silver, 3j, to 3j, as a local application, and chlorate of potash and hydrochloric acid internally, so prepared that free chlorine shall remain in solution. He takes of chlorate of potassa, 2 dr. to be finely powdered; the undiluted hydrochloric acid, 1 dr. to be poured upon it, continually stirring; and as soon as the whole powder assumes a yellow color, and the fumes of chlorine begin to arise, the water, 8 oz. to be dashed in, by which the escape of chlorine is at once arrested. Dose— $\frac{1}{2}$ oz. every 1, 2 or 3 hours, according to the urgency of the symptoms. With this he uses wine and good diet. If the affection extends to the larynx and trachea, he gives calomel, 1 gr., and tartar emetic, $\frac{1}{2}$ gr., repeated according to circumstances, and at the same time uses good diet and stimulants.

Mr. Ramskill, physician to "Metropolitan free hospital" (*Lancet*, Feb. 1859), is opposed to any active local application, where the glands about the neck are much swollen, from the belief that the swelling and dyspnœa will probably be increased. He uses in these cases infusion of chamomile, with a few drops of creasote or "liq. calcis chlorinata," to be applied by syringe for children, and an inhalation of the

same by the mouth, frequently during the day. The syringe to be used 3 or 4 times a day. The throat to be enveloped with a poultice of chamomile. He removes the loose membrane, where practicable. Internally, he gives chamomile, with muriatic acid, and ether, and quinine, and endeavors to produce cinchonism—at the same time, nourishment and stimulants. He cites one case, where he supposed nit. argent., 10 to 18 grs. to the oz. tended to produce spasm of the glottis, and death.

The editor of the *Lancet* (October 1858) believing the disease to be a form of scarlet fever, advises ammonia, and beef tea, and a steam blanket, to endeavor to cause the poison to be eliminated by the skin. A warm blanket wrung from hot water is to be put around the patient, and this to be enveloped in dry blankets, and the patient to be sweated for an hour, and rubbed rapidly dry, and covered in dry blankets.

Mr. Cammack (*Lancet*, October 1858) gives calomel where the larynx is involved, and decoction of bark with hydrochloric acid, and applies solid nitrate of silver to throat. He uses a gargle of salt and vinegar—says the disease is herpetic.

Mr. McDonald (*Lancet*, November 1858) says, after trying a great variety of treatment, gives in the beginning a purge of calomel and rhubarb, and then porter or wine, with comp. tinct. quinine, 1 oz. in wine and water, every 4 hours. Gives stimulants freely—and the patients express themselves much benefited and relieved by them. One gentleman drank 12 pints of Bass' pale ale in one night. The local applications (from which he says the patient may expect to derive more benefit than from any other treatment), to be concentrated muriatic acid and honey, in equal portions, every 6 hours. -

Dr. Peney (*Med. Times and Gazette*, March 1859) gives oil of turpentine, 10 minims, every 2 hours, to a child 2 to 6 years old, and alternates this with 5 grs. carbonate of ammonia every 2 hours, with good diet, wine and porter *ad lib.* He was induced to try the turpentine, from Mr. Carmichael's

success with it in iritis, in place of mercury, in bad constitutions—thinks the mercury injurious in diphtheria—has tried a great many other remedies, but has succeeded best with the turpentine.

Dr. Corbiott (L'Abeille Médicale, 23d March 1859) bleeds, and uses leeches and emetics, and detaches the membrane with a spatula, and removes it with the forceps. He also gives internally decoction of citron and vinegar whey—and for a gargle, a decoction of roses. He prefers bleeding *men in the arm, and women in the feet*—and from his whole prescription, we should not conclude he was a very judicious practitioner.

Dr. Gazailhan (L'Abeille Méd. March 1859) advises the use of tinct. chloride of iron, and good diet—and the tinct. chloride of iron to be applied locally.

Dr. Kingsford (Lancet, November 1858), in *simple* diphtheria, uses a calomel purge in the beginning; then chlorate of potassa, with dilute hydrochloric acid, in decoction of bark, with mopping the throat two or three times a day with the “compound solution of alum.” In the *severe* forms, he warns us that we should not be misled by feverish excitement, and be induced to adopt antiphlogistic treatment. In these forms he uses wine and nutritious diet freely, and gives tinct. chloride of iron, with chlorate of potash, 10 to 30 minims of the former, with 10 to 30 grs. of the latter, every one, two or three hours, according to the age of the patient and the degree of pyrexia. The more intense the inflammatory symptoms, the oftener should the medicine be given. The throat to be mopped with nitrate of silver, 16 grs. to the oz., every eight hours. Where there is much difficulty of deglutition, enemata of strong beef tea and port wine to be given every two hours; and to a child above three years old, 5 grs. of quinine should be added to every alternate injection. The quantity to be injected never to exceed 2 or 3 ozs. at a time—and these enemata to be used, should the child refuse voluntarily to swallow, where there is no mechanical obstacle to his doing so. He says mercury in any

form, excepting as a cathartic in the beginning, is especially contra-indicated.

Dr. Semple (Lancet, October 1858), in a discussion before the London med. society, says, the best treatment is unquestionably the application of strong caustics to the throat at the very earliest possible period—and the hydrochloric acid concentrated was perhaps the best. This appears to stop the progress of the false membrane into the air passages, and acts somewhat in the same manner as concentrated nitric acid in presenting the progress of phagedenic ulceration.

All the authorities recommend tracheotomy, where the case becomes desperate, if the strength and condition of the child will justify it. There is said to be rather more chance of success of the operation than in croup, the membrane being less apt to spread to the bronchia than in croup.

Though there is some diversity in the treatment just cited from the different authorities, it all goes to show that the affection is regarded as one of adynamic character, and that the supporting treatment must be used, and an antiphlogistic one avoided. The authorities are all too, united upon the propriety and necessity of local treatment early in the history of the complaint, if possible—some regarding it of more importance than the constitutional remedies.

The only exception to be made in favor of the antiphlogistic treatment, among the authorities quoted, is the fanciful French physician, Dr. Corbiott, who bleeds men from the arm, and women from the feet, gargles the throat with decoction of roses, gives decoction of citron, and pulls the membrane away with forceps.

ART. II.—*Saturnine Medication in the Treatment of Pulmonary Phthisis.* A Clinical Lecture by M. BEAU, at La Charité.
Translated by JAMES DUNN, M. D., of Petersburg, Va.

I ANNOUNCED to you for to-day a lecture relative to some therapeutic experiments on pulmonary consumption, upon which I have been engaged for some months.

You may have remarked that for some time I have prescribed for certain consumptives, in my service, the pills of Morton. This is only an euphonism to disguise from the patients the true nature of the medicine. The pills of Morton, as you know, are composed of balsamic substances; those that I employ contain only white lead, in the dose of 10 centigrammes to the pill. Till now, this substance has never been used internally as a therapeutic agent. You will no doubt ask what notion suggested its employment in tuberculosis. This is the explanation. Pulmonary tuberculization is not, by a great deal, an affection necessarily mortal; each day pathological anatomy furnishes us proofs of it. At Salpêtrière, among 180 women arrived at the natural term of life, I found only three, the summits of whose lungs had not been attacked by this disease. But the cicatrization which takes place in such cases, in lesions of small extent, may equally take place where the organs have been more gravely compromised; *cadaveric* inspection again demonstrates it. What is then the organic action which permits the cure of tuberculosis? It may act, without doubt, in several ways; and, in the majority of cases, the re-establishment of the digestive functions, which renders to nutrition its physiological activity, is the necessary prelude; in fact, pulmonary phthisis is in my eyes the product of two factors, of which the first is anemia—the second the tubercular diathesis. Suppress the first, and you will suppress the manifestation of the second. Without being formulated in terms so precise, this proposition has before now been in vogue in science; in fact, the best authors recognize, in a general way, that tubercles are developed particularly in those who have been for a long time subject to debilitating causes; that is to say, persons who are more or less anemic. It is thus that we can understand why a crowd of apparently differing means have succeeded in the treatment of pulmonary phthisis; such as quinine, cod liver oil, common salt, proto-iodide of iron, generous wine, certain mineral waters, &c.—all means which have triumphed over

the disease by re-establishing the digestive functions, the color and forces. Here then you have a first method of cure for tuberculosis ; but cannot the re-establishment take place under other circumstances? We know, in fact, that in pathology there exist incompatible affections ; each malady, or rather each diathesis may have its antipode. We wish to show that phthisis pulmonalis does not escape this general law. There exist certain anemias, which never lead to tuberculization, but on the contrary, seem to offer an almost complete immunity in this respect.

In his very remarkable researches upon miasmatic diseases, M. Boudin has called our attention to the fact, that phthisis pulmonalis is entirely exceptional in this affection. Arrived at the last degree of debility, the inhabitants of marshy countries may, without doubt, succumb to miasmatic cachexia, but they do not become tuberculous before dying.

There are, without doubt, some exceptions to this rule, but in medicine we ought hardly to expect to find absolute laws. For a long time I have remarked that there existed a similar antagonism between saturnine intoxication and pulmonary tuberculization ; and since the time when I made public the results of my investigations on this subject, my attention has been constantly aroused upon this point. Nothing is rarer than to meet with consumption among workmen whose profession compels them to work in lead ; and for some time no fact of this kind has presented itself to my observation. Nevertheless, last year I received into the Cochin hospital a house painter who was phthisical ; but in this case the exception was only apparent ; for according to the patient's account, he had never experienced any symptoms of intoxication. His disease had then undergone no modification, under the influence of saturnine preparations. I showed you not long since, in No. 22, St. Felix ward, a lead founder attacked with pulmonary tuberculosis, which had been rapidly developed after a casting of metals whose irritating vapors he had inhaled. One might have thought that in this case the phthisis had resulted from

an acute saturnine intoxication; but it was not so at all; it was a casting of mixed metals, containing, according to the patient, antimony, arsenic and mercury; which proves, in passing, that the inspiration of certain metallic vapors can give rise to phthisis; but lead has nothing to do with this case. It is not very singular to see persons pale, emaciated and so profoundly debilitated as the workers in the preparations of lead generally are, never contract a disease which is particularly severe on feeble persons, and ought not we therefore to conclude that between these two morbid states there exists an insurmountable opposition? From the notion of a special antagonism between tubercle and saturnine intoxication springs the idea of creating an artificial intoxication of the same kind, with a therapeutic object. I had, nevertheless, for a long time deferred the realization of this idea, when two most remarkable facts, which have presented themselves to my observation this year, in my ward service at La Charité, dissipated all my hesitation. We received a man, at the commencement of the year, who, after having exercised another profession, found himself obliged by poverty to work at the manufacture of ceruse. But the patient, who had been phthisical for some time, and whose first hæmoptysis dated back to 1848, has been freed from all symptoms of his thoracic affection since having the lead colic. Since this time he has followed several trades, and his poverty has caused several relapses; but there is a complete cessation of the spitting of blood. He is lying at No. 3, where you can examine him. For some time the tuberculization, dormant with this patient, appears to me to experience a recrudescence, which is due doubtless to the fact that the saturnine cachexia has had time to exhaust itself. My intention then is to revive it by administering to him daily some ceruse in pills.

A second patient entered the hospital to be treated for lead colic. We found he had been phthisical for some time, and we have left him under the influence of the saturnine intoxication, contenting ourselves with giving him nour-

ishment only. But the daily examination of this patient shows us the gravest symptoms gradually disappearing, above all those that auscultation offered us. The marked râles (crackling) formed at both summits at the time of his entry, have ceased entirely. A slight recrudescence manifested itself under the influence of the notable depression of temperature during the first days of the month of April; but the patient, considerably improved without having submitted to any treatment, has just left for the asylum of convalescents at Vincennes. His cough had almost entirely left him; the quantity expectorated had considerably diminished; and as we showed you, there were no longer any râles in the summits of the lungs. The patient now congratulated himself on the happy change brought about in his condition; and it was this that induced him to request his removal to the asylum for convalescents.

The consideration of these two last facts decided me to impregnate some of the patients in my service with lead. I have done it with success. I had prepared some pills containing 10 centigrammes of ceruse; and by a rapid but progressive augmentation, I have come to give 8 per day. We suspended or diminished the dose as soon as arthralgia manifested itself, or when the patient appeared to us sufficiently impregnated—that is to say, at the simultaneous appearance of the lead lines of the gums and of the icteroid tint which characterizes, as you know, the first degree of saturnine poisoning.

It remains for me to speak to you of the results obtained in the course of my experiments. And I will reply now to any objections which may be addressed to me. Can we with a clear conscience resort to saturnine impregnation in the treatment of phthisis? Yes, without doubt, for we employ daily poisons much more dangerous (arsenic, nux vomica and mercury), to obtain the cure of different diseases, which are far from having the same gravity as tuberculosis. Besides, our experiments have never been pushed to a point at which they might become dangerous to the patients. By suppress-

ing the administration of the toxical agent at the appearance of the first serious symptoms, we suspended promptly the effects. We can now communicate to you the result of five observations—three men and two women. You may judge of the results obtained.

At No. 15, St. Felix ward, is lying a patient with whom the treatment commenced the 29th of March. On the 17th of April the intoxication appeared to us sufficient. At the commencement auscultation showed us several friction sounds (*craquements*) at the summit of the right lung behind. He had had hæmoptysis, and presented habitually vomitings in the attacks of coughing. To-day all these symptoms have nearly entirely disappeared; the phthisis is *dry*; there exist only dullness, and prolonged suppuration in the right supra spinal fossa. It is worthy of remark that this patient, habitually constipated, goes more easily to stool since his saturnine impregnation. It is a phenomenon that we will find in the others. Lead does not seem to act upon consumptives as upon individuals in death.

A second patient, at No. 12, St. Felix ward, who offered a phthisis but slightly advanced, although he had had several hæmoptyses, has been rapidly impregnated. At the commencement of the treatment he offered moist crackling at the right summit, behind and before. To-day there exists only dullness and respiratory weakness in the same place. The cough and expectoration have diminished simultaneously in a remarkable manner, even for the patient, who has ceased to complain of them.

With a third patient, No. 1, St. Felix ward, who has just left the hospital, the results of the treatment have been much less satisfactory. He presented a phthisis of the febrile form, the symptoms of which we found it impossible to improve. All that we can say is, that after a stay in the hospital of two months, the patient left in almost the same state as at the time of his entry. We may ask, consequently, if the saturnine treatment did not assist in stopping the progress of this disease, habitually so rapid in its march when

it assumes the febrile form, as it did in this case? We will add, that he resisted, a longer time than all of the others, the saturnine modification, and that six weeks of treatment were necessary, before the said lines and other signs of a sufficient impregnation appeared with this patient, the diarrhoea, which existed from the first, was in no wise modified by the medication at the time of his leaving. He still had 4 or 5 liquid stools daily.

It would seem, so far, that women are more susceptible than men to the modification caused by this medicament. We can to the present time only cite the results of his observations, although we have many other patients in process of treatment in our wards.

At No. 4, St. Felix ward, is a woman, 30 years of age, who presented, at her entry, the symptoms of a well marked phthisis, without complications. She offered to auscultation prolonged and rude respiration, and 4 or 5 slight crackling sounds in the right supra-spinal fossa, with corresponding dullness. There existed besides, a spasmodic cough very fatiguing to the patient, and giving rise to a great abundance of muco-purulent expectoration. For some time she had hæmoptysis, nocturnal sweats, wasting and fever in the evenings. The patient, who yielded readily to the impregnation, continued to suffer for about fifteen days after the suppression of the pills; but in the height of her sufferings, although very much disturbed on account of the arthralgic pains, the constipation and colic, she said to us, of her own accord, in the midst of her complaints, *I cough no more now*. She left to-day in a very decided state of amelioration. There is no longer any crackling at the two summits; the expectoration has completely ceased; but there exists still a little comparative dullness at the right summit.

Finally—At No. 12, St. Felix ward, we have a young woman who presents the gravest case of all those whose treatment we have undertaken. She had, in fact, an enormous cavity under the right clavicle. Already, for three years,

the progress of the tuberculosis had been suspended by hygiene, voyages to warm countries, and a rational treatment. But seven months ago this young woman unfortunately became pregnant; and the moral preoccupation which results from such a state, joined to all the material causes of debility which are the consequence of it, have exposed her to a new relapse. The patient commenced coughing again in January; she entered on service in March; the treatment commenced the 8th of April. In spite of her repugnance to the pills, the impregnation was quick, as soon as she took them in good faith. The arthralgic pains, which promptly supervened, obliged us to suspend the treatment; and the patient herself notified us that the character of the expectoration had been sensibly modified by the operation of the pills. The sputa, whose foetid odor excited, in passing, a repulsion almost amounting to vomiting, had lost all disagreeable odor, and sensibly increased in consistence, in proportion as it decreased in abundance. It would be, without doubt, interesting to test the character of it before and after treatment, by the aid of the microscope, and by chemical analysis.

Such then are the facts we possess, while waiting to observe others. To recapitulate, I will say, that the influence of lead seems to exert its action above all on the purulent secretion, which constitutes in great part the expectorated matters; in phthisis it diminishes the quantity of it, and thus causes the cough to disappear with all its consequences. We cannot, evidently, pronounce the word *cure*, because tubercular lesions do not consist alone in a secretion of mucus, but *more* in an induration of pulmonary tissue, which results from an infiltration of accidental products. It would require, consequently, a more prolonged treatment and a more extended experience than ours has been, to be able to announce, with some appearance of reason, that we have completely triumphed over pulmonary phthisis. But we cannot, it seems to me, deny the useful influence of the treatment. We have at least staid the progress of the dis-

ease; we have gained time—and this is one of the principal indications in therapeutics. We add, as auxiliary to this treatment, that it is necessary to try and nourish the patient the best possible—to give to him wine tonics, and to observe, with regard to him, all the rules of a rational hygiene. The only serious inconvenience that the treatment so far has produced, is the anorexia that it inevitably leads to. We might try to administer the medicament by frictions, as we do for mercury, with persons whose stomachs will not support it. The administration of lead in pulmonary phthisis is not an entirely new idea in science. Every body knows, in fact, that the acetate of lead has been employed for a long time in this disease; but we know also that it was considered only as an astringent; it was not given as an alterative; there was no attempt to produce a decided modification in the organism, amounting to saturnine cachexia. It was definitely a palliative, designed to combat the sweats and the colliquative diarrhœas of consumptives. In a memoir published in 1831, Fouquier extols the employment of this medicine with the objects which have just been indicated. We find in this work some observations of consumptives in the third stage, whose sweats and diarrhœa have been improved and suspended by the use of acetate of lead, in the dose of five or six grains, who have finally succumbed, after having experienced a momentary relief. You see there exists, in this respect, no correlative between the ideas of Fouquier, and those which have just been enunciated. I should doubtless have been able to employ the acetate of lead, but I preferred to use the ceruse, whose action on the mucous membrane of the stomach is much less irritating. The researches which we have just undertaken, we will follow to the end. We desire that our hopes may be realized.

ART. III.—*Infirmiry Reports of the Medical College of Virginia.* By T. S. MICHAELS, M. D., Acting Resident Physician.

CASE I.—*Typhoid fever.*—Robinson Word, aged 24 (service of Dr. McCaw); previous health good; admitted June 30.

This man has been sick for upwards of a week, complaining of pain in chest, cough and diarrhœa. Has taken medicine, and had a blister applied to abdomen. His symptoms to-day are evidently those of continued enteric fever, with bronchial complication. Tongue red and dry; appetite bad; stools frequent and thin; skin dry; tenderness in right iliac region; place blister over chest, and give the following: \mathcal{R} Calomel, grs. iij; pulv. Doveri, grs. iij. \mathcal{M} .

July 1st.—No better. \mathcal{R} Plumb. acet. gr. i, by mouth, and grs. iij, by rectum.

July 2d.—Feels a little better; had two passages this morning. \mathcal{R} Plumbi acet. grs. iij; pulv. Doveri, grs. v.

July 4th.—Diarrhœa very severe. \mathcal{R} Plumb. acet. grs. x; pulv. opii, grs. iv. Div. in pills iv. One every six hours.

July 6th.—Had no passage during the night, but had three early this morning; feels better; let him have \mathfrak{z} ss brandy and \mathfrak{z} i paregoric thrice daily. \mathcal{R} Syr. senega, \mathfrak{z} j; ol. terebinth, gtt. x, ter in die. Tinct. opii, gtt. xxx, at night, per rectum.

This treatment, omitting the paregoric, was continued daily until the 15th, when the following was ordered: Brandy, six ounces per diem. \mathcal{R} Syr. senega, \mathfrak{z} j; ol. terebinth, gtt. x, ter in die. Diet liberal.

He was kept on the above, decreasing the amount of brandy according to circumstances, until the 10th of August, when he was discharged well.

[*Note.*—The interesting point in this case was the metastasis of the disease apparently from the bowels to the lungs. During a period of twenty-four hours there would be profuse diarrhœa, when suddenly this would almost disappear,

and there would be violent cough and expectoration for the same length of time—the diarrhoea again reappearing, the bronchial symptoms would vanish. This transfer of the secondary symptoms from the bowels to the lungs continued throughout the whole course of the disease.]

CASE II.—*Amputation of penis.*—Bob, aged 55 (service of Dr. PETICOLAS); cancrroid tumor on glans penis; admitted July 6th.

Some fifteen years ago, had small pimples on the glans penis, but did not apply to a physician for relief until there was much swelling; was treated for syphilis. The tumors (two in number) were cut off and cauterized, but returned, growing more rapidly than before. These tumors now cover nearly the whole of the glans penis; of a dark color; often bleeds considerably; pain lancinating; prepuce very much thickened, and red; mild nitrate mercury ointment ordered to be applied.

11th.—Operated on patient this morning; amputated about an inch and a half of the penis; three small vessels were ligatured; not much hemorrhage; the upper portion of skin was brought together by means of suture; keep cold applications with a little laudanum applied to part.

15th.—Doing very well; makes water without difficulty; continue cold applications.

24th.—Had a chill yesterday, followed by smart fever; penis doing very well. R Tr. verat. viride, gtt. iij; continue cold dressing, and inject with cold water.

August 2d.—The prepuce had so contracted around its margin, that the stream of urine was almost entirely stopped; this morning the prepuce was removed by the knife; apply cold water dressing to part.

4th.—Improving; continue cold water, &c. and give following: R Infusion cinchona, ʒij; Huxham's tr. bark, ʒij, twice daily.

He steadily improved under this treatment until the 22d, when he was discharged entirely well.

TRANSLATIONS AND SELECTIONS.

I. *Clinical Report on Pneumonia*. By AUSTIN FLINT, M. D.

DR. AUSTIN FLINT has published (Buffalo Medical Journal, May 1859) an interesting clinical report on cases of pneumonia, observed by him at the New Orleans charity hospital, 1858 and 1859.

We subjoin his conclusions and remarks.

Of the fifteen cases, in all the pneumonia was limited to a single lobe. In one instance two lobes were successively attacked (cases 3 and 4), recovery from the first attack having taken place before the second occurred. This was probably true in another instance (case 9). The lower lobe was the seat of the disease in all save two cases. In one of these (case 4), they had been previously affected, and this was probably true of the other instance (case 9).

Of the thirteen cases in which the lower lobe was affected, the disease was seated in the right side in seven, and in the left side in six.

The pneumonia was primary in twelve of the fifteen cases. Of the three instances in which it was developed secondary, it occurred as a complication of typhoid fever in two, and as an intercurrent affection in pulmonary tuberculosis in one instance.

In the twelve primary cases, the disease was uncomplicated in all but three instances. Delirium tremens was developed as a complication in ten cases; and in one instance, pleuritis with considerable liquid effusion coexisted. More or less pleuritis is almost uniformly present in cases of pneumonia, but it is certainly rare for the pleuritis, under these circumstances, to be attended by much effusion.

The ages of the patients varied between 20 and 45, the mean age being about 30. In nearly every instance the patients were robust and in good health when attacked with the disease. Several were intemperate, and several were subject to attacks of intermittent fever.

Exclusive of three cases remaining in hospital at the end of my term of service (two of these remaining with other affections), and of the case which ended fatally the length

of stay in hospital varied from six to twenty-two days—the mean period being a fraction over thirteen days.

A fatal result occurred in one case only. In this case, as already stated, the patient had been discharged a few days before, convalescent from an attack of pneumonia affecting the lower lobe of the right lung. He resumed his habits of intemperance directly he was discharged, and was seized a second time with pneumonia, now affecting the upper lobe of the left lung. He walked to the hospital, a distance of three miles, after being attacked, and died by asthenia, fifteen hours after his admission, without coming under my observation.

Convalescence was rapid in all instances, save one in which the pneumonia occurred as a complication of typhoid fever. Exclusive of this instance, the resolution of the affected lung, as shown by the disappearance of the physical signs denoting solidification, was rapid. The resolution was in all instances complete, slight relative dullness on percussion only remaining, which, as is well known, persists for some time after recovery from pneumonia. In all instances the symptoms of the disease, viz: cough, expectoration, etc., completely disappeared. In no instance were the patients left enfeebled, but at the time of discharge they all reported themselves able to return to their avocations, and the majority were day laborers.

The treatment pursued in these cases, as the reader has doubtless remarked, was not complex. The sulphate of quinia was given in tolerably full doses, in the cases in which intermittent fever had previously existed. This remedy was not prescribed with special reference to the pneumonia, but in order to forestall the development of intermittent fever as a complication. Quinia has been extolled as a valuable remedy in pneumonia, irrespective of the liability of the disease to become complicated with intermittent fever if the patient reside in a malarious section, and, especially, if he has been subject to attacks of the latter affection. However this may be, it is certain that the remedy, given in full doses, does not exert an unfavorable influence on the progress of the pneumonia. It is not contra-indicated by this affection. To prevent the development of intermittent fever, and if developed, to arrest the paroxysms as speedily as possible, are important objects of treatment in certain cases of the disease under consideration. The combination of the two affections often places the patient in imminent danger, when with either affection, singly, his condition would not

be serious. Happily, under these circumstances, we possess a special remedy by which we may expect to control one of the affections. This, then, is the leading indication, and the life of the patient may depend on its being promptly and effectively fulfilled. The practitioner who gives precedence to indications derived from the pneumonia, under these circumstances, or who so divides his attention as to fulfill incompletely the leading indication, commits an error which may be fatal to the patient. As a rule, it is well to recognize, at the commencement, a liability to this complication, and to forestall its occurrence, especially when the protective remedy, to say the least, does not interfere with the favorable progress of the pneumonia.

✓ Opium enters more or less into the treatment of these cases. My observations have led me to regard this as a valuable remedy in pneumonia. As a palliative of pain, it fulfills an important indication; for pain, in addition to the suffering which it occasions, determines an afflux of blood to the painful part. This fact is illustrated in neuralgia affecting the supra-orbital nerve. During the paroxysm of pain, the eye becomes injected, and the redness rapidly disappears after the pain has been relieved by an opiate. But there is reason to believe that opium exerts a salutary effect beyond the relief of pain. I have repeatedly noted marked diminution in the frequency of the pulse and respirations, in cases of pneumonia, a few hours after the patient had taken full doses of opium. It appears to lessen the perturbatory effects in the economy of the local inflammation, if, indeed, it does not diminish the intensity of the inflammatory action. Some practitioners are deterred from the use of this remedy in pneumonia, by the idea that it interferes with the removal, by expectoration, of the exuded products of inflammation. But how often do we observe the rapid disappearance of the solidification in pneumonia, with slight expectoration, or none whatever! The intra-vesicular exudation is, for the most part, absorbed, not expectorated, a fact not strange when the structure of the cells, and the facility of endosmosis in this situation are considered. Interference with expectoration, therefore, if true with respect to the employment of opium in pneumonia, is not a valid objection. The merits of the remedy, however, in this application, must rest on clinical experience; and I cannot but think that this paper will be of some utility, should it serve to remove from the minds of some readers groundless apprehensions with respect to the free use of opium in pneumonia.

Alcoholic stimulants were employed to a greater or less

extent, in the treatment of these cases, and in all the cases the patients were placed on a nutritious diet. The abstract notion that stimulants and sustaining food are inconsistent with the treatment due to local inflammation, is a remnant of Broussaism which still exerts considerable influence on medical practice. It suffices to destroy this notion, to bear in mind the significant injunction of Chomel, viz: *not to treat diseases, but to treat patients affected with disease.* With regard to stimulants, it may be stated, as a rule, that they are indicated in cases of local inflammation, whenever the patient in health is addicted to their use. They cannot with safety be withheld, under these circumstances, if the local inflammation involve, from its seat or intensity, danger to life. But without reference to previous habits, the use of stimulants in the treatment of pneumonia, and of other local inflammations, is important in proportion as it becomes an indication to support the powers of the system. It is, perhaps, an error in medical practice as common and as serious as any, to overlook or depreciate this indication in the management of local diseases. Practically, the existence of this indication and its urgency, in individual cases, may be brought clearly and forcibly before the mind by proposing at the bedside the following questions: Is the patient in danger of death? If death occur, will it take place by asthenia? How imminent is the danger of death by asthenia? Whenever, in the management of disease, the physician has reason to fear that he may lose his patient by asthenia, and in proportion to the tendency to a fatal result by that mode of dying, alcoholic stimulants, as a rule, form an important part of the measures indicated, on the same ground that they enter into the treatment of fevers. And this remark applies equally to nutritious diet, viz: the animal essences, etc. Cases of pneumonia occur in which patients are to be saved by pursuing, boldly and perseveringly, the supporting treatment precisely as in cases of low typhus or typhoid fever. And the indications of this plan of treatment may be present early, as well as late in the progress of the disease. The union of delirium tremens, with pneumonia, for example, often places the patient in imminent danger of death by asthenia. The free use of stimulants and concentrated nutriment, is requisite to carry him safely through the perils of this combination. Two of the cases included in the present collection (Nos. 13 and 14), illustrate this remark.

But even when the danger to life is not great, it is an object to support the system with a view to a speedy and rapid

resolution of the inflammation. Alcoholic stimulants may not be required for this object, but it will be promoted by a nutritious diet. The fear of feeding the disease by feeding the patient, is a vulgar notion not warranted by clinical observation. I do not hesitate to allow patients to take food as nutritious in quality and as freely as they desire. The late Dr. Graves was so impressed with the importance of supplying the system with nourishment in febrile diseases, that he desired to be placed as an epitaph on his tomb, "He fed fevers!" He might have extended the circle of disease in which feeding is important. It is hardly less important, in some instances, speaking metaphorically, to feed pneumonias, than to feed fevers, and, indeed, feeding, as an essential element of supporting treatment, is important in any disease when it is an indication to obviate the tendency to death by asthenia.

With regard to the time when an active supporting plan of treatment (stimulants and concentrated nutriment) is indicated, and the extent to which it is to be carried, I will make but a single additional remark. If there be room for doubt on these points, it is better to err by commencing too soon, and pushing it too far, than by delay and insufficiency; for while it is easy to discontinue or diminish supporting measures before much if any actual harm is done, time which has been lost cannot be recovered.

Quinia, opium, alcoholic stimulants and nutritious diet constituted the treatment in the cases embraced in this report. The grounds for the non-employment of certain therapeutical measures, in these cases, are now to be considered. Blood letting, general and local, tartar emetic, the veratrum viride, mercury, cathartics, blisters, and other modes of counter-irritation are employed, to a greater or less extent, in the treatment of pneumonia. None of these remedies, however, entered into the treatment of these cases. This fact, without explanation, might lead to erroneous inferences as regards the views of the writer.

Blood letting in pneumonia has, of late, been much discussed. I have contributed my mite towards this discussion,* and do not propose to enter upon it in this paper. I will simply remark, that, in my opinion, it is an error to assume blood letting to be never useful in pneumonia, albeit it is a far greater error to advocate the indiscriminate employment of this spoliative measure in that affection. The

* Report on Blood Letting in Pneumonia, Buffalo Medical Journal, vol. xi, 1856, page 283.

propriety of blood letting, however, is rarely a question in hospital cases of pneumonia. In the great majority of instances when patients are admitted into an hospital, the disease has advanced to the second stage; one or more lobes are solidified, and, under these circumstances, the abstraction of blood will, in general, only tend to retard resolution. Had these cases been under observation from the commencement of the disease, it is possible that blood letting might have been indicated in some instances, not with a view to arrest the inflammatory action, nor to limit its extent, nor to lessen the amount of exuded products, but to diminish the intensity of symptomatic febrile movement, relieving the heart of over-accumulation of blood in its cavities, and consequent over-tasking of its powers. With this limited view of blood letting, making due allowance for its evils, it is indicated in only a small proportion even of the cases of pneumonia which come under observation at the onset of the disease.

The tartar emetic and veratrum viride undoubtedly control, in a marked degree, the frequency of the heart's action, and so far, diminish for the time symptomatic febrile movement. It remains, however, to be determined, to what extent this effect is important with reference to the inflammatory process and resolution. We can at this day understand how Laennec was deceived in attributing the rapid removal of the exudation in pneumonia to the influence of tartar emetic; for it had not then been observed, as it has been since his day, that the exudation disappears, in some instances, quite as rapidly without any treatment. These cardiac sedatives, if useful when the symptomatic febrile movement is intense, are certainly not indicated when the action of the heart is but slightly or moderately increased, as in a pretty large proportion of the cases of pneumonia in which the affection is limited to a single lobe, especially after exudation has taken place.

The action of mercury has been considered as useful in two ways in pneumonia, viz: limiting the amount of exudation and promoting its absorption. With reference to the first of these supposed effects, the exudation in pneumonia generally takes place, to its fullest extent, before mercurialization can be produced. With reference to the second effect, the exudation is absorbed, in favorable cases, quite rapidly without mercurialization. Without, therefore, presuming to deny altogether the so-called anti-plastic and the sorbefacient powers of mercury, I believe that it is a remedy generally uncalled for in the treatment of pneumonia. The occurrence of salivation at the time of convalescence, is, to

say the least, an inconvenience which, if not necessary, it is desirable to avoid. Having for many years relinquished the use of this remedy with reference to its special or constitutional effects in treating this disease, I am satisfied that it may with safety and advantage be dispensed with.

Cathartics, as a means of depletion during the early stage of pneumonia, may be indicated. If adequate to fulfill the object of depletion, they are certainly to be preferred to blood letting, since they do not involve an expenditure of the organized constituents of the blood, and are therefore not spoliative. Except for this purpose, it may fairly be doubted whether they are called for in pneumonia. They conflict with supporting measures when these are indicated. That they are not important with reference to the absorption of the exudation, is sufficiently illustrated by the cases reported in this paper. In one of the cases (No. 15) considerable liquid effusion, together with the solidifying deposit, disappeared in a few days, although, inadvertently, the bowels had been permitted to remain constipated for a week.

Blisters and other modes of active counter-irritation, when employed in pneumonia, are, of course, considered as acting usefully by way of revulsion. I suppose that no judicious physician attributes to them this action during the first stage of the disease. To employ them in this stage is to add a certain amount of cutaneous inflammation to the existing pulmonary inflammation. After solidification has taken place, all the results to which the inflammation may be expected to give rise, have already occurred. Revulsion, then, where it is attainable, ceases to be an indication. Is it imagined that a traumatic inflammation of the skin diminishes the afflux of blood to the affected lung? But the affected lung in the second stage of pneumonia is already anæmic! The inconvenience occasioned by blisters to the patient is considerable; they are also a source of inconvenience to the practitioner, by interfering with the daily examinations of the chest in order to determine the physical condition of the affected lung. These remarks, of course, do not apply to mild revulsive applications, such as sinapisms, and to fomentations which doubtless possess a certain value in the treatment of pneumonia.

The several therapeutical measures, thus, which have been enumerated, as not entering into the treatment of the cases of pneumonia now reported, were not employed, because, with reference to some of them, the disease did not come under observation sufficiently early to find the indications for their use, or, the indications existing in a certain proportion

of cases only, they did not happen to be present in these cases; and with reference to other of the measures mentioned, their value and propriety in the disease under consideration are, to say the least, doubtful. As the modern conservative surgeon rejects the doctrine contained in the old aphorism, *melius anceps remedium quam nullum*—so the conservative physician should refuse to resort to remedies which are either unnecessary or of questionable utility, except in the cases in which a deviation from this rule is warranted for experimental observation. I cannot but think that the practice of medicine would gain much if practitioners, instead of deliberating at the bedside as to whether this or that potent remedy is called for, were oftener in the habit of propounding to themselves this enquiry: Are there present any clear indications for interference?

The last remark suggests a point of fundamental importance in the treatment of this, as well as other acute diseases, viz: its intrinsic tendency as regards termination. Does pneumonia, in itself, tend to destroy life? We might answer this question by citing the results as reported by different practitioners, the disease being treated by different and sometimes quite opposite measures. But the clinical study of the disease uninfluenced by medication, pursued of late years on an extended scale, enables us to answer the question more directly. The results reported by Dr. Dietl, and others, in which, in a large number of cases, no active remedies were employed, show that pneumonia, limited to a single lobe, and uncomplicated, ends in recovery in the vast majority of instances. This statement is, of course, exclusive of the epidemic forms of the disease; but it is probable that the fatality of epidemic pneumonia depends generally on some important complication, or associated affection. A series of cases of sporadic, uncomplicated pneumonia, therefore, ending favorably, under a certain plan of treatment, does not afford adequate evidence that the success was due to the treatment. It would be a fairer conclusion to impute the success to the intrinsic tendency of the disease to recovery. On the other hand, a series of cases in which the fatal cases were not few, would justify, at least, a suspicion that the want of success might be due to the treatment. It would, however, be an error to suppose that because pneumonia, under favorable hygienic circumstances, generally ends in recovery without medicinal treatment, that medication is consequently never called for. Better far, indeed, no treatment than injudicious interference; but judicious treatment may nevertheless save some lives which would be lost

under the expectant plan. Moreover, there are objects of treatment in disease, in addition to recovery. Relief of distressing symptoms during the progress of disease; a cure cito et jucunde as well as sure; a convalescence rapid, and a recovery complete, leaving the powers of the body not permanently impaired—these are important ends to be kept in view in medical practice. The natural history of a disease, and its intrinsic tendency to life or death constitute the true point of departure for the study of therapeutics in relation to that disease, but medical art should not be content with being able to state the chances of recovering even when the chances are vastly in favor of this termination.

Am. Journal Med. Science.

II. *A Visit to the London Hospitals.* By E. D. FENNER, M. D., of New Orleans.

MY DEAR B.—I arrived at this great metropolis on the 7th instant, after a very pleasant journey from the time I left home, and have been recently so busy seeing novelties and wonders, that I begin to feel tired of it, and must soon change the scene. Among the many and various interesting objects that have attracted my attention in London, I have not overlooked its great medical institutions, and I beg leave now to offer you the following crude observations upon such of the hospitals and distinguished medical men as I have seen. I must here acknowledge my obligation to our old friend and quondam fellow citizen, Dr. G. T. Browning, for his very kind courtesy ever since I have been in the city.

St. Thomas' Hospital.

June 13th.—Dr. Browning accompanied me to this venerable institution, which dates back to a beginning in the year 1213. It was first an almshouse, but in 1552 was endowed and incorporated by King Edward VI, whose statue now stands in the yard, and was erected in 1737. It looks like the statue of a boy of sixteen years. In the front yard is a statue of Sir Thomas Knight, erected in 1714, one of the earliest and greatest benefactors of this institution. We walked through wards, consisting of very large rooms, with beds on each side. Every thing looked very neat and com-

fortable. The head nurses are very intelligent women, who have very nice apartments, and receive good wages. There is a Magdalen ward for venereal diseases; only seven or eight cases in at present. The general wards were not full. The operating room is extremely small, plain and antiquated. We followed some students into the lecture room, and sat down to hear a clinical lecture by Dr. Barker. There were only four students present when he began, but ten more came in afterwards. He commenced a slow sort of Presbyterian style of reading reports of cases, with minute detail of symptoms, and hardly ever looking up at his audience, which soon produced such a soporific effect on me, that I thought it best to retire, and we did so, I think, without his observing us. I was unable to procure any report of this hospital.

Westminster Hospital.

Operating day.—Tuesday, June 14th, 1859.—My friend Dr. Browning failing to meet me at two o'clock, I determined to go to the hospital without a conductor. On entering, saw a young man, who told me there was no impropriety, and showed me the way to the operating room. At the door we met Mr. Holt, one of the surgeons, to whom I introduced myself, and received a polite invitation to accompany him and take a seat near by. There were two other surgeons present, Mr. Brooks and Mr. Morehouse, who belonged to the hospital and had operations to perform.

Operation 1.—*Removal of a small fibrous tumor from the breast of a young woman.* She was put under chloroform, and the tumor soon removed, with a considerable portion of the mammary gland. Two or three small arteries were tied, and the wound sewed up with *silver* sutures.

Operation 2.—*Lithotomy* in a man who had suffered from severe stricture of the urethra and also stone in the bladder. The stricture had first been relieved, and then the stone was crushed. He had undergone the operation twice before this. He was put under chloroform, and with some difficulty a piece of the remaining stone was found and crushed. Mr. Holt said that he now only performed lithotomy when lithotomy was forbidden by some peculiarity in the case.

Operation 3.—*Stricture in the urethra.*—Man, aged about thirty-five, and rather weak in the lungs. On this account Mr. Holt would not use chloroform. He used an instrument for *tearing* open the stricture. It was quickly done, and the pain only momentary. Mr. H. has a steady hand, and is a nice operator.

Mr. Brooke now took the stand.

Operation 1.—Removal of external piles from a woman. She was put under chloroform, and it was done with scissors.

Operation 2.—Hydrocele.—In a man for the third time; a simple puncture with a trochar—no injection afterwards. Mr. B. said it was hardly necessary. Patient's penis had been amputated previously.

Mr. Holthouse, the third surgeon, then took the stand, and had nothing but one operation on the eye of a blind man. He removed a portion of the *lens*, but said it would not do much good.

I walked through the wards of the hospital and found every thing neat and comfortable. The operating room and lecture room both very small. There is a school now connected with this hospital, not chartered to confer degrees, but authorized to send applicants to the university as candidates. This hospital has 175 beds, and affords relief to about 2,000 in-patients and 20,000 out-patients annually.

Middlesex Hospital.

June 15th.—Dr. Browning accompanied me to this hospital at twelve o'clock, being operating day. Found nothing on hand; walked through the wards, and found the usual arrangement of large wards, with about twenty beds in each—low, iron bedsteads and no curtains, divided into male and female, medical and surgical wards. The amphitheatre, operating or lecture room small and very plain. Dissecting room small and very plain, on the ground floor of a back building, only one long table, suitable for six or seven subjects. In this building are also the apothecary and chemical rooms. Number of patients about 150. It is a fine hospital. Large number of out-patients as in the previous.

St. Mary's Hospital.

June 15th.—This is one of the new hospitals—a fine large building—large wards, with very high ceiling. I got the last published report, which was for 1857. The number of in-patients for that year was 1,480; out-patients 4,026; average number of in-patients 143.

Operating day.—Mr. Coulson, surgeon—a good looking man, with a smiling countenance, apparently about fifty-five years of age; gray hair.

Operation 1.—Removal of a small cheloid tumor from the top

of the sternum of a young woman—a simple thing, and soon over. She was put under chloroform.

Operation 2.—Removal of a large morbid growth, involving the right labium pudendi. He didn't seem to have any very definite idea about it, but cut out a considerable portion of it. She was under chloroform. In both these operations Mr. Coulson used the silk ligature. These were all the operations he had. The operating room or amphitheatre is larger and neater than any I have yet seen.

Guy's Hospital.

June 17th.—I took breakfast early and got to this celebrated old hospital about nine o'clock, with no other guide than a letter from my friend Dr. Crawcour to Dr. Odling, professor of practical chemistry in the medical school. I found a lecture going on by Dr. Oldham, addressing about thirty students in a very fluent and animated style on *deformities of the pelvis*. He is a good looking man, and is one of the professors of midwifery. The lecture being clinical, he entered fully into the propriety and method of premature delivery. At the close of the lecture we all followed him into one of the wards, and saw him perform the operation.

He did it with a long trochar, and very soon drew off about eight ounces of the liquor amnii. He then examined a new case that had just entered the ward—an intelligent looking nervous young woman, with a countenance expressive of much anxiety and suffering. The doctor questioned her minutely relative to the previous history of the case, and then examined by the touch. He almost immediately shook his head and said aloud to the closely packed students around, "*malignant disease to great extent.*" No sooner had he said this, than the poor woman's countenance, which had been lit up with anxious hope, suddenly sunk, and she began to sob most bitterly, as if fully conscious that her doom was sealed. I could not but remember how often the French physicians and surgeons had been condemned for doing this very thing. If he had not pronounced the diagnosis in her hearing, it would have answered just as well, and the poor woman might have enjoyed the *delusion of hope* for some time, which would certainly be preferable to the pang of despair.

I then went into the laboratory, and found Dr. Odling lecturing and demonstrating practical chemistry. Dr. O. is a very handsome and youthful looking man, a fluent talker,

and expert manipulator. He was a class mate of our Prof. Crawcour, and seems to be equally enthusiastic in his branch. At the close of his lecture he greeted me very cordially, and carried me through all the departments of this great hospital. The buildings cover a very large space of ground, and are well arranged into medical, surgical and maternity wards, laboratory, dispensary, pharmaceutical, dissecting and lecture rooms, museum and library. The house makes up about 500 beds; the in-patients average 500 constantly, and 5,000 a year. The out-patients number about 40,000 a year. All these London hospitals appear to have dispensaries attached to them. The museum at Guy's is very fine (15,000 specimens), and the library has eight or ten thousand volumes. The lecture room would seat about 200. At this hospital is a bronze statue of Thomas Guy, its sole founder, in 1821, and a beautiful marble statue of Sir Astly Cooper.

From this I went to *University College Hospital*, with a note of introduction to Dr. Jenner. I found him busily engaged prescribing for out-patients. I sent him my note, and was soon invited to enter. I took a seat and saw him examine a considerable number of patients, men, women and children. There was one case of intermittent fever, quite a rarity in these parts. Dr. J. examined the patients with great care before prescribing. All the children had to be stripped naked. He does not attend wards at this time.

Dr. Jenner is a nice, tidy looking gentleman; hair black, and very thin on the top of his head; of rather low stature, but stout; looks Scotch, but says he is English, and not related to Edward Jenner, of vaccine celebrity. After finishing his service, he kindly took me through the wards of the hospital and also the university building adjoining. As we went along we passed Dr. Parkes, and on my telling him that he, Dr. Parkes and Dr. Watson were the men, of all in London, I had most desired to see, he introduced me to Dr. Parkes, whom I found to be a very fine looking and affable gentleman. I took the occasion to mention Dr. H. F. Campbell's report "*on the nervous system in febrile disease*," and said I would send him a copy if they would review it in one of the London journals, which they promised to do. They gave me their cards, and invited me to call. I found every thing about this hospital in nice order. There are generally from 150 to 200 patients in the wards, and a large number of out-patients apply twice a week for advice and medicines.

Having through the kindness of Dr. Odling obtained a ticket to the *Royal Institution of Great Britain*, I went at 9

P. M. to hear a lecture by Mr. Faraday, one of the most distinguished philosophers of the day. When I applied, the secretary said he could not refuse me a ticket, but that I might congratulate myself on being an American, as there was hardly any other to whom he would grant the favor, and being the last lecture of the season, the house would be very full. I presume he was influenced somewhat by the fact that this great institution, the first of the kind in London, was founded in 1799 by a few men, among whom was our distinguished countryman, Count Rumford. It was here that Sir Humphrey Davy delivered his celebrated lectures, and announced his great discoveries in chemistry and electricity, which have immortalized his name and conferred honor on the institution. He was followed by Mr. W. T. Brande, and then came Mr. Faraday, who, full of years and honors, still charms and delights the distinguished audiences that always attend his lectures. On this occasion the lecture room was crowded with the very *elite* of the city, among whom were many noblemen and ladies. The subject was *phosphorescent light*. Mr. Faraday is a very good looking man, with a profusion of gray hair, fine eyes and ruddy complexion. He is upwards of sixty years of age, but quite active, and one of the most expert and successful experimenters I ever saw. He is very fluent, and speaks rapidly, as if anxious to communicate as much knowledge as possible in the time allowed. His experiments were beautiful, and he was listened to with profound attention. He lectured about an hour and a quarter, and I did indeed congratulate myself on having the happiness to see and hear so great a philosopher. This is a splendid institution, having a fine museum, and a select library of 30,000 volumes.

I here closed my observations for the day; went back to Morley's; jotted down my memoranda, and retired to rest pretty late.

St. Bartholomew's Hospital.

June 18th.—I went to this ancient and celebrated institution about noon. This was the theatre of Mr. Abernethy's great deeds and quaint humor, and is decorated with a fine marble bust and portrait of him. St. Bartholomew's was founded in 1102, and is, I believe, the oldest of all the London hospitals. It receives within its walls nearly 6,000 in-patients annually, and its out-patients and casualties amount to nearly 90,000 annually. It contains 650 beds, of which 420 are allotted to surgical cases, and 230 to medical cases

and the diseases of women. The museums of anatomy, materia medica and botany are extensive, and open daily to students. The library contains upwards of 5,000 volumes of standard works, also the chief medical journals. A reading room is open to students of the school, during the greater part of the day. Among the medical and surgical staff, are some names well known in our country, as the venerable Sir Wm. Lawrence, Mr. Stanley, Mr. Skey, Mr. Paget, Dr. Burrows, Dr. West and Dr. Farre. On entering I was conducted to the room where Mr. Paget was prescribing for surgical out-patients. I sent him my card, and he welcomed me cordially. He dispatched thirty or forty patients in a very short time, and then having a pressing engagement, he asked his assistant to conduct me to the operating room and wards. It was operating day, and Mr. Stanley now drove up. He saluted me politely, and asked me to walk in and see what was to be done. Mr. S. is rather short and stout, with gray hair and a good face. Having learned from my conductor that there was very little to be done here to-day, I concluded to go at once to King's college hospital, where there was a prospect of seeing a number of operations.

King's College Hospital.

When I arrived I found about a hundred spectators in the amphitheatre, and the distinguished surgeon, Mr. Ferguson, commenting on a case upon which he had just operated. Mr. Ferguson looks to be about fifty years of age, robust, well formed, rather bald, and a very cool, self-possessed air. He speaks very deliberately, and not without the disagreeable appearance of affectation. But he is as cool and deliberate in operating as he is in speaking. I witnessed the following:

Operation 1.—Lithotomy on a man; third time. The patient was put profoundly under chloroform, and Mr. F. proceeded to extract about a dozen of fragments of stone from the bladder. From the manner with which these rugged fragments were dragged through the urethra, I shall certainly not envy this patient the pleasure he will have in emptying his bladder for the next day or two. He was on the table nearly an hour.

Operation 2.—Amputation of the thigh.—This was a case of *united fracture*, which had resisted all the means resorted to for the purpose of producing bony union. Mr. Ferguson removed the limb with the knife alone, and then sawed off a considerable portion of the bone. After tying the arteries,

he closed the stump with silk sutures, and it looked very neat. It was done under chloroform. After the operation was over, he drew from the lower fragment a long ivory peg that had been driven into the bone to cause reunion. Mr. F. did not mention any other means that had been resorted to in this case. I could not but suspect that this poor fellow had lost a leg for the want of skillful surgery.

Mr. Bowman now took the stand, and operated on a young woman for a deformity of the upper lip. It was very tedious, and her beauty was certainly not improved at the close of the operation, though it may be ultimately. Mr. B. is a tall, thin, handsome man, with an intellectual countenance, and apparently about forty. His remarks on the case were very interesting.

Mr. Wood, assistant surgeon, now took the stand, and operated for the permanent cure of reducible hernia on a young man. He took occasion to condemn Wurtzer's operation, and then performed *his own*, which, from the little I saw and heard of it, I am unable to describe so as to make you understand.

Dr. Watson holds the honorary position of consulting physician to this hospital, but does not attend wards. Dr. Budd, his successor, is in service, but I have not had the pleasure of seeing him.

London Fever Hospital.

June 23d.—This morning my ever kind friend, Dr. Browning, conducted me to this institution. Having seen very few cases of fever in any of the hospitals I have visited, I felt a strong desire to see one specially devoted to this class of disease, which, as you are aware, is the most important of all in our part of the world.

The London fever hospital is rather small (only about 200 beds), situated in a high and airy place, and most admirably arranged for ventilation and cleanliness. The visiting physicians are Alexander Tweedie and Southwood Smith; assisting physicians, Wm. Jenner and C. Murchison; resident medical officer, Dr. J. D. Scurrah. The latter received us, and very politely conducted us through the entire establishment. Neither of the visiting physicians were present, which I regretted, as the names of Tweedie and Southwood Smith have long been familiar to us as writers on fever. They are now old men, and rather behind the new lights of the day.

Dr. Scurrah gave me the annual report for 1858, from

which it appears there has been a marked decline in the prevalence of fever in the last year or two. Some other diseases besides fever, amounting to more than one-third of the whole, are admitted into this hospital. The admissions for fever last year were 357, viz: typhus 15, typhoid 180, febricula 44, scarlatina 118. Deaths from fever 59, viz: typhus 9, typhoid 28, scarlet 22. This shows a mortality from fevers of more than 16 per cent., which certainly does not reflect much credit upon the fever doctors of the great metropolis, especially when we consider that every possible convenience and advantage are here supplied. The only drawback is, that some of the cases are admitted in advanced stages of disease, a thing that occurs at all hospitals. The largest admissions occur in September; the smallest in February. Daily average throughout the year, thirty-eight.

The mortality from typhous fever was upwards of 50 per cent., from typhoid 13.72 per cent., and of scarlet fever 19 per cent. Now I would ask whether any respectable practitioner of seven years' experience in any city, town or neighborhood in our southern country, would ever boast of such success as this in the treatment of fever. Dr. Scurrah says they do not pretend to *cure* fevers at this hospital, but rather to guide them as safely as possible through their natural course. The treatment consists of wine, nourishing broths, sometimes camphor mixture, and astringents when there is diarrhœa.

It is evident that fevers at this day constitute but a small portion of the diseases requiring medical aid in London, so different from the state of things in the days of Sydenham. And this is unquestionably due to the wonderful improvement that has taken place in sanitary measures. In the three weeks I have spent in London I have traversed it in almost every direction, and I must say it is the cleanest city I ever saw. The only place I have seen that could be compared to even Common street, our great thoroughfare, was around the great fish market of Billingsgate, and even this comparison would be decidedly in favor of the latter. London was once as sickly as New Orleans, but is now one of the healthiest cities in the world; and this is entirely due to her admirable sanitary measures. If our own ill-fated city would only follow her example, there is no telling what great benefit would accrue. I have obtained some valuable reports from the General board of health, which I shall bring home with me.

The hospitals named are all I have found time to visit during my sojourn in London, though there are five or six

others of high standing. Nearly all of the great hospitals have medical schools attached, and afford fine facilities for instruction. In these schools students are prepared for examination before the Royal colleges of surgeons and physicians, which confer the highest degrees upon the successful candidates.

The amount of charity extended to the afflicted poor of London is almost beyond calculation, and reflects great honor upon the liberality of her wealthy citizens. All the great hospitals are free to the poor; but besides these, there are eighty-eight free dispensaries, and other medical institutions of various kinds, devoted entirely to the relief of the poor. From the Medical Directory I learn that in only twenty-one of these institutions the average number of patients for a single year was upwards of *one hundred and ninety thousand*. In a single one—the Metropolitan free hospital—the average number of patients was fifty thousand. Many other instances might be given of extraordinary charity and benevolence to the poor. It really appears to me that the poor of this great city are the favorite *pets* of the rich, who bestow on them every imaginable care and comfort.

But I find my letter is getting entirely too long, and lest I should weary the patience of yourself and readers, I will here conclude, with the promise to let you hear from me again, after I shall have visited some of the other seats of medical science in this part of the world. I start to Edinburgh to-morrow, thence to Dublin, and after that to Paris, where I shall probably write again.

I remain, very truly, yours,

E. D. FENNER.

London, June 25, 1859.

N. O. Med. News & Hosp. Gaz.

III. *On Insolatio, Sun-Stroke, or Coup de Soleil.* By WILLIAM PIRRIE, M. D., late Assistant Surgeon in H. M. Seventy-first Highland Light Infantry.

EVERY one knows the influence of high atmospheric temperature in stimulating the organic, and, if continued for some time, in depressing the animal function; yet many who have not had opportunities of personal observation may

not be aware of the distressing effects of heat when it acts as an exciting cause of sudden attacks of illness. Exposure to the influence of a tropical sun may give rise to various minor forms of illness of a febrile and more or less lingering character, but on these affections it is not my purpose to write.

The terms *insolatio*, *sun-stroke*, or *coup de soleil*, are applicable to those cases only in which an individual is seized with sudden alarming illness, and in which life is placed in immediate jeopardy, the patient exhibiting some one or other of the combinations of symptoms to be afterwards described. The object I have in view may, perhaps, be best accomplished by classifying the following remarks under the successive heads of—

1st. The various forms which the attack may assume; or, in other words, the different degrees of intensity of the affection; and the symptoms characteristic of each form.

2d. The predisposing causes of this affection.

3d. The post-mortem appearances, and the conclusions deducible from them as to the nature of the disease.

4th. The treatment most successfully adopted in these cases.

Amongst the many cases of sun-stroke which came under my observation, three different forms of attack were observable:

In the first and speedily fatal form, the individual has no premonitory warning of the impending evil, or, if he has any, it is of momentary duration, for he immediately falls down insensible, quite unconscious of all outward impressions, makes a few hurried, gasping respirations, and instantly expires. The examples I had opportunity of seeing of this most rapidly fatal form of the disease, occurred during direct exposure to the rays of the sun. The redness and heat of the surface of the body, the perfect unconsciousness, and the gasping respiration, are striking features in this sudden and fatal form of seizure.

In the second form of attack the sufferer has an unusual and extremely painful feeling in his head; a distressing sense of bursting and burning in his eyes, accompanied with giddiness and confusion of vision; a most overpowering sensation of constriction in the chest, with greatly oppressed respiration; great heat of the surface of the body; a dark red, almost livid color of the skin, and an alarming sense of general oppression and exhaustion. On looking at the patient, the impression formed was, that the chief suffering was in the chest, and patients laboring under this form com-

plained most of the symptoms referable to the chest and the breathing, and in many instances described them as almost insupportable.

If proper means be instantly adopted and zealously pursued, consciousness may not be lost, and the symptoms may be removed, and leave the patient to all appearance comparatively well; or they may increase in severity, and merge into those of the third form, the phenomena of which are the following:

The sufferer complains of violent pain in the head and eyes, of giddiness and confusion of sight, of a most painful feeling of suffocation and constriction in the chest, of extreme debility, especially in the back and limbs, of intense thirst, and of heat in the epigastrium, all which symptoms rapidly increase in severity until the supervention of insensibility, which too often most rapidly ensues. If called in early, the medical attendant usually finds his patient in a state of extreme prostration, and affected with convulsions, vomiting, a burning hot skin, a very contracted pupil, an excessively suffused conjunctiva, and a rapid and feeble pulse. In many cases, shortly after the seizure, priapism and emission of semen take place. The respiration in all cases is hurried, imperfect and gasping, and, before insensibility comes on, the sufferer is often in a restless, alarmed and agitated state, not unlike that observed in persons laboring under delirium tremens. The patient remains in this condition for a longer or shorter time, according to circumstances; but before the scene closes, the pupil becomes so contracted as to be almost obliterated, the conjunctiva more and more suffused; the respiration, at first hurried, imperfect and gasping, becomes slower and rather stertorous; the convulsions and vomiting cease, and the sufferer lies perfectly motionless, it may be, in a state of low muttering delirium, but completely insensible to all outward impressions. The skin retains its burning heat, but becomes rather clammy; the sphincters relax, the rapid, feeble pulse becomes more and more weak, and at last the patient expires.

Such are the symptoms when the affection ends fatally; but the case may result in fever, or the individual may have a severe attack, and he may ultimately recover; but after the characteristic symptoms have been removed, he usually continues to suffer, for a longer or shorter time, from pain in the head and eyes, from giddiness and confusion of vision, from singing in the ears, and from pain in different parts, especially in the back and limbs; all which symptoms are generally of a more or less decidedly periodic character.

The subject of coup de soleil may therefore suddenly expire, or he may succumb after a longer or shorter time, or his case may merge into fever, or he may ultimately get well, after experiencing for some time such symptoms as I have attempted to describe.

The first time I had an opportunity of seeing a case of sun-stroke, an impression was immediately made on my mind that I had never seen a person affected with the same disease, or with one similar to it. The greater majority of the cases of sun-stroke which I saw occurred during direct exposure to the rays of the sun, but some cases commenced in the shade. Examples of all the forms of the complaint commencing during direct solar exposure were numerous, but I did not see any case of what I have described as the most rapidly fatal form, in which the seizure occurred while the person was in the shade.

Having now come to the consideration of the predisposing causes, it may be stated that whatever tends to diminish the vigor of the constitution may act as a predisposing cause. Insufficient rest, undue labor, intemperance, excessive fatigue, depression of spirits, debilitating influences of every kind, are unquestionably predisposing causes of this affection. A scanty supply of water seems also to act as a powerful predisposing cause. But observation seems also to justify the conclusion, that one who has newly come to a tropical climate, though he be temperate in all things, and placed in equally favorable circumstances with an old resident, will, if exposed to the exciting causes, after prolonged exhaustion, be more liable to an attack of sun-stroke than one who has passed several years of his life in the same high temperature. Amongst the many cases of sun-stroke that occurred in the Central Indian force, the troops comprising which were in similar circumstances with respect to rest, fatigue and food, by far the greater number of seizures occurred amongst those who had recently arrived in that country. I have, moreover, seen European children, born and brought up in India, run and play about, exposed to the sun, with perfect impunity, whilst men being newly arrived in the country were being taken by sun-stroke. By protracted residence in a warm climate, the system becomes acclimatized, so to speak, or is made tolerant of, or capable of bearing such a degree of heat as would, *cæteris paribus*, undoubtedly be a cause of alarming illness in one not seasoned to such a climate.

Again: Insufficient covering for the head seems to have an undoubted influence in rendering one more liable to an

attack of coup de soleil. The natives of India most certainly have this conviction, for however inattentive they may be to protecting the rest of their person, they are, as a class, most careful in always having a due amount of covering on the head during solar exposure.

The imperative and harassing duties constantly devolving on the medical officers, the extremely short time that could be allowed to intervene between death and interment, and other causes which need not be mentioned, rendered it utterly impossible to have so many post-mortem examinations as was desirable; but when such took place, it struck me as a remarkable circumstance that the usual appearances were in degree far from being proportioned to the urgency and rapidity of the symptoms. The appearances I observed were—an engorged state of the scalp and conjunctiva; a rather turgid condition of the vessels of the pia-mater, choroid plexus, and of the veins on the surface of the brain, especially in the neighborhood of the sinuses; and a slight increase of the ordinary red punctuation of the cerebral substance. Engorgement of the lungs, to an extent to cause a dark purple or even black color, was the most striking morbid appearance observable in the chest, as indeed in the body. I did not detect any extravasation of blood, and therefore did not see what is properly denominated apoplexy of the lung, which, I believe, has been sometimes seen by other observers; but the engorgement was so great as to bear a striking resemblance to that state. The right side of the heart and its vessels were slightly distended, and the left side of the heart contained a smaller quantity of blood of dark color. The liver, in general, seemed congested. The other viscera were healthy. I never saw the blood coagulated, and I had no opportunity of examining the spinal cord.

Having endeavored, in the previous portion of this paper, to describe the symptoms and post-mortem appearances, the question naturally arises—What is the mode of death in the various forms of sun-stroke? It seems very evident that, in all but the first and fearfully rapid form, death is by apnoea, or at all events the symptoms of apnoea plainly predominate; and hence the name “heat-asphyxia,” given by some to this most alarming disease. The symptoms are distinctly those of that mode of dying in which death commences in the lungs; but by what means the circulation begins to be arrested in the lungs—or, in other words, the manner in which high temperature operates in causing stagnation of blood in the lungs—whether it be by giving rise to immense engorge-

ment, or by causing imperfect arterialization of the blood—I do not consider myself qualified to give an opinion.

Every one knows that non-arterialized blood finds its way with difficulty through the lungs; but it would be interesting to know how the depurating process is suspended to a degree sufficient to induce the commencement of stagnation in the capillaries of the lungs, if that condition of the blood be the cause of failure of circulation through the lungs. On this interesting subject Mr. Martin remarks: "In all the recorded instances of heat-apoplexy, we have perceptibly presented a great, and, to the European, a most unnatural elevation of temperature, a proportionate rarefaction of the air, and a consequently diminished supply of oxygen at each inspiration; a resulting deterioration or venalized condition of the blood; a depression of the nervous functions, with augmented animal heat, and an impacted skin. Malaria and other atmospheric impurities, with their consequences, are occasional accessories, with the super-addition also of fatigue and its results. These circumstances, after acting on a system previously injured by improper diet and other intemperance, by disordered or diseased viscera and defective excretion, will go far to account for all the phenomena of this suddenly fatal disease. The condition of the lungs, heart and brain, immediately resulting from the extremely rarefied air and intense solar heat, appears to be one of extreme venalization of the blood, with acute congestion at first, proceeding rapidly to a passive congestion and greater depression of the nervous and vascular energies, and to consequent narcotism of the lungs, heart and brain."

It is quite possible that even in the forms of sun-stroke in which the respiratory apparatus is primarily affected, there may be some degree of cerebral syncope, even from the commencement; but, although it may be an erroneous impression, the study of such cases produced in my mind the belief, held by many, that death is caused by apnoea, or that the symptoms of that form of death predominate.

In the forms of sun-stroke in which the patient, without any premonitory symptom, falls down insensible, makes a few gasping efforts to breathe, and in a few moments expires, the symptoms appear very plainly to indicate death beginning in the brain. The sensibility is first destroyed, and, as a necessary consequence, the functions of the lungs are suspended, and circulation of venous blood takes place; circulation of venous blood in this form of dying being the consequence of the loss of sensibility; whereas in death by apnoea it is the cause. The essential anatomical characters

of both modes of death being the same, presenting only differences of degree in the chest and in the head, it is chiefly by the symptoms during life that an opinion can be formed as to whether death was caused by coma or by asphyxia. I am quite aware how speedily sensibility is destroyed in death by apnoea; but many cases of sun-stroke produce a strong conviction in the mind of the medical observer, that sensibility ceases first, and that death begins in the brain.

It would be interesting to know in what way solar heat destroys the action of the brain—whether it be by pressure caused by expansion of its vessels, or by some influence independent of the condition of vessels within the head. In many of the cases which came under my observation, in which death did not take place very speedily, the symptoms merged into those of compression, and the appearances within the head, which I have described, were in character, though not in degree, such as might be expected in death caused by pressure on the brain. I did not see that extreme distension of vessels within the head which some observers have described, and looking at the brain gave me the impression that some influence apart altogether from distension of vessels, must have assisted at least in destroying the functions of that organ. In those cases in which loss of sensibility was the first symptom, and where loss of sensibility was almost immediately followed by death, the state appeared to me to bear a much greater resemblance to concussion than to compression of the brain.

Some of these almost instantly fatal cases brought forcibly to my recollection the experiments of Legallois and Dr. Wilson Philip—experiments made on animals to ascertain the effect produced on the heart and organs of circulation by injuries of the brain. It was found that when violent concussion was produced in the brain, an immediate and great depression, or complete suspension of the action of the heart, was the result, from which it is concluded, that a sudden injury to the brain, such as a violent concussion or shock, suspends the action of the heart, and thus proves fatal; that, in short, death occurs from syncope. The vital powers of the heart seem to be instantly destroyed, for when the chest of the animal is opened immediately after death, it is impossible to excite any contraction; and instead of the veins leading to the right side of the heart, the right side of the heart itself, and the trunk and branches of the pulmonary artery, being found distended, and the left side empty, as in death by coma and asphyxia, the distinguishing peculiarity

is, that there is no difference in the quantity of blood in the right and left sides of the heart. It is well known that surgeons believe that cases of concussion of the brain occasionally prove fatal in the same way; and it may be found that some of the almost fatal forms of sun-stroke conduct to death by fatal destruction of the heart's action, caused through the intervention of a sudden impression on the brain. I had not an opportunity of making a post-mortem examination in a case of immediate death from sun-stroke, and cannot therefore say any thing from personal observation; but I have understood that scarcely any morbid appearances have been observed in some cases—a condition of parts reconcilable with death by concussion, but not with death by coma or asphyxia. After the impression was produced in my mind that this may be one of the ways in which sun-stroke produces an extinction of life, I had a great desire to make a careful dissection in a case of almost instant death, but the state of my health soon deprived me of the power of attending to that or to any object of professional interest or duty.

Treatment.—As every one knows, the tendency observed to this or that mode of dying, is a useful guide in determining the general principle of treatment—the object aimed at being the employment of means best calculated to obviate the mode of death to which there is a manifest approach. The observance of this rule in cases of sun-stroke, would suggest depletion and means for producing derivative effects, when death is threatened by coma or apnœa, and the use of stimuli when by syncope: but the best directed treatment is too seldom followed by favorable results.

My testimony regarding treatment may be given in a few words. In many cases of almost instant death by sun-stroke, life was lost before it was possible to institute any mode of treatment; and, in many others, the powers of life were so thoroughly sunk from the moment of seizure that remedies produced no impression on the symptoms. In no case was general blood letting at all beneficial, but decidedly the reverse. In many instances, I have seen it employed by men of great experience who were well qualified to judge when it was likely to be useful, and the results were always unfavorable; and I have been told by many who had ample means of observation during the summer campaign of 1858, that venesection always seemed to hasten a fatal termination. The result of blood letting seemed of itself sufficient to show that the vital organs are overpowered by some influence in addition to that of local congestion.

The treatment most generally useful consisted in removing the patient to the shade as speedily as possible—in preserving the body in a proper position—in the energetic employment of cold affusion to the head—in producing as cool an atmosphere as possible around the patient—in the diligent use of friction and heat to the extremities and other parts, so as to cause derivation from the head and chest—in acting sharply on the liver and bowels by mercurial and other purgatives—in frequently administering diffusible stimuli, and in causing determination to the surface of the chest by applications of mustard or of turpentine. Along with these remedies, local depletion from the head seemed sometimes to be beneficial. When the patient became comatose, blisters to the back of the neck, and stimulating cataplasms to the feet or legs, were tried; but, in too many instances, they were of no avail.

Another measure, to which Dr. Simpson, of her majesty's 71st regiment, attached importance, was to engage the patient's attention, by keeping him answering questions put to him in a loud tone of voice; to rouse him up by continually talking to him, and by rubbing his limbs; and not to leave him to himself, till the remedies should have fair time for their operation. This expedient seemed, in some cases, to assist in warding off the insensibility, if not in some cases to prevent its accession.

Under the use of the above mentioned treatment, modified according to circumstances, many patients recovered; but, in too many instances, the result was fatal to those who were attacked with this singular disease.

Not having had an opportunity of consulting the works of the authorities on this affection, the above observations can be of no value except as being a faithful account of what came under my own observation in numerous cases of sun-stroke, which occurred during Sir Hugh Rose's summer campaign of 1858, in Central India.

IV. *Monthly Review of Parisian Medicine and Surgery.* By THEOPHILUS MACK, M. D., Lecturer on Materia Medica and Therapeutics in the Medical Department of the University of Buffalo.

At the Academy of the sciences, M. Cl. Bernard presented a memorandum from Messieurs Demarquay and Leconte, upon the influence which gases exercise upon the healing of

sub-cutaneous wounds. "After having established the mean duration of the repair of tendons divided under the skin in rabbits, they have discovered, that under the influence of daily injections of air within the wound, the work of organization is completed sensibly in the same time; the injection of pure oxygen retards it, without producing inflammation. Hydrogen produces an inflammation accompanied by considerable abnormal vascularity, which occasions a great hindrance in the organization. Lastly, carbonic acid, on the contrary, favors the organization of sub-cutaneous wounds, and brings about their cure in a much shorter time, than in the tenotomies made without the influence of the air."

M. Flourens continued his communications on formation of bone by periosteum, with the view of demonstrating the forces which preside in the evolution of organic matter and decide *form*. This force he designates *morpho-plastic*; and he also attempts to prove the existence of another power, the *meta-plastic*, which effects its continual metamorphosis.

M. C. Rouget read an essay upon the part which the amylaceous matter, styled by chemists *zoamyline*, performs in the evolution of embryonic tissue.

M. Petrequin, in treating of the application of electricity in vesical paralysis and catarrh, makes the subjoined excellent remarks:

"It will be seen that the employment of this or that mode of electrizing is not indifferent. Rigorous observation of the phenomena has led me to recognize that the dynamic action of the pile which acts upon the nervous system augments under the empire of the multiplications, and by the shocks which follow the production of sparks. The induction instruments, which furnish *volto-faradaic* currents, realize the most convenient conditions for combating paralysis successfully. Practically, it must not be forgotten, and the counsel of health of the armies insists with reason upon this recommendation, that if the electric current directed upon a nerve has only a moderate energy, it seems to replace or reinforce only the physiological action of the nerve in default; but that nevertheless, under too prolonged an influence of even moderate electric currents, the excitability of the nerves is gradually enfeebled and may be even exhausted; that, on the other hand, every action of electric currents tends to propagate itself to the whole nervous system and produce reflex effects; and these reflex effects are the more to be dreaded the more intense the currents are, &c. It is important in general to make the sitting short and to have recourse to electrization, temperate, and localized upon the nerves to

be excited. Here is what anatomy teaches us as to those of the bladder: 'The nerves of the bladder are furnished by the *vesical plexus*, dependent on the hypogastric plexus, which itself emanates from the sacral plexus. This last is formed by the pelvic portion of the great sympathetic, and by the vesical branches of the spinal, sacral nerves; which, united to the sacro-lumbar, terminate in the sciatic nerve. . . . The vesical plexus communicates with the hemorrhoidal plexus, another branch of the sacral plexus. Hence, physiologically, we are led to apply electricity in the treatment of paralysis of the bladder by placing one element of excitation in the bladder, and the other in the rectum.' This has been our plan. Further, we have left the urine in the bladder, instead of emptying it, as practiced before, to the end that it may serve as a conductor to all the internal surface of the organ. Lastly—we have, to act upon the anterior and top of the bladder, the current carried by an exciter to the centre of the hypogastrium. We may add, that we should resort to it with reserve, to avoid the reflex effects, which scarcely ever fail to take place if we wander towards the root of the thighs or the iliac spines."

Vital statistics in France show the mortality of the human species to be greater between the ages of twenty and twenty-five, than between twenty-five and thirty. Dr. Bertillon explains this unexpected fact by the conscription, which subjects to the increased mortality of military life a large proportion of men from twenty to twenty-five.

Academy of medicine.—A discussion upon the work of M. Labourdette relative to the introduction of medicaments into milk by assimilative digestion, led to the expression of some doubts as to the efficacy of this indirect medication, especially as to the superiority of iodized milk over cod liver oil.

At the séance of the 10th May, further contributions were received as to the evils resulting from the rise and manufacture of arsenical green pigments, and the means of obviating those evils.

The committee upon the contagiousness of secondary syphilis reports:

1. That there are secondary syphilitic accidents manifestly contagious, at the head of which they place the *flat tubercle*.

2. This rule is applicable to nurses and sucklings, as well as to other cases; and there is no reason to suppose that with infants at the breast, the results should be different from those in the adult.

In "The Medical Union" appears a paper from M. Laure, a naval surgeon, on Re-vaccination. He states:

1. That vaccine matter transferred from arm to arm is most efficacious.

2. Virus from re-vaccinated adults is as reliable as that taken from children.

3. Re-vaccination with adults should be performed more deeply than under the epidermis.

4. Re-vaccination is an important hygienic measure, the execution of which should be carefully watched.

5. This proceeding is as necessary with those who have suffered from variola, as with those who have been subject to cow-pox inoculation.

6. The local affection is slight in re-vaccination, provided rest be enjoined on the fifth day. The constitutional effects are important.

In-growing toe-nail is removed by M. Gourut by the following process: "Short strips of adhesive plaster are placed on one another, so as to form a kind of brim; two such fasciculi are made and placed a little in front and a little behind the morbidly growing nail. Into the groove thus artificially made, and which just occupies the root of the nail, semi-fluid Vienna paste is put. After a few minutes a black eschar is formed properly hemmed and limited by the adhesive plaster. The paste is now quickly taken off; and in a few days the nail comes off, without pain, by the gentlest traction.

M. Chalut reports the reduction of a case of strangulated hernia, by copious and frequently repeated draughts of strong coffee.

The treatment of chorea by arsenious acid, is spoken well of in the *Gaz. des Hôpitaux*.

Variolous orchitis is described in a clinical review in the *Gaz. des Hôp.*; and it is demonstrated that variola has an influence upon the spermatic organs.

At the Chirurgical society, two observations were contributed, of successful treatment of hæmorrhage from the deep palmar arch, by compression of the humeral artery; and of hæmorrhage from the indicator, controlled by digital compression of both radial and ulnar arteries.

The prophylactic action of bromine in pseudo-membranous affections is advocated, and apparently deserves trial.

M. Marjolin has directed attention to a circumstance which will have the effect of modifying the laws of amputations, viz: the elongation of the bones after the performance of amputation in very young subjects.

Two cases of prolonged gestation are communicated by Dr. Liegard, one of 308 days and one of more than 10 months.

Doctor Fournier proposed a new method of treatment of stricture of the urethra :

"After having ascertained by means of the catheter, the precise seat of the lesion, we mark a line with nitrate of silver, about one centimetre in front of the stricture ; it is as a mark for the guidance of the patient. Every time that he experiences a desire to micturate, he should exert a pressure with his fingers upon this line, a pressure sufficient to prevent the jet of urine, impelled with force, from escaping by the meatus.

"This jet of urine should have for its object, to dilate during about 15 seconds all the portion of the canal situated behind the spot compressed. After 15 seconds he ceases to compress the canal, in order to permit the escape of this first jet of urine, to repeat the compression anew, and the same operation four or five times successively, according to the quantity of urine contained in the bladder.

"The patient ought to feel the necessity of urinating five or six times in the course of the day ; and for this purpose, he should drink liberally of some diuretic tisane, the tisane of chien-dent (dogs-grass), for instance. To favor the success of the treatment, I recommend a moderate exercise, a diet not full—and principally chosen from the vegetable kingdom, and two simple baths each week.

"In directing the treatment which I have submitted in a succinct manner, I have seen an organic stricture two centimetres in length, situated between the bulbous and membranous portions, disappear. It had existed more than a year. The treatment ended three months since, and the cure continues still."

M. Verneuil reported a case of calculus of the nasal fossæ, taken at the début for a neuralgia, then for a necrosis of the bones of the nose. Attack painful, very intense, and intermittent. Lithotrity in four sittings. Expulsion of the rest of the concretion. Cure followed by slight deformity of the nose.

M. Hervey de Chegoin stated that he had met with a similar calculus in the dead subject.

A case of complete luxation of the eye, is reported in the *Journal of Medicine and Surgery* :

The column of water from a fire-engine struck violently upon the eye-lids, in full force, and at a short distance from the engine. They were thus forced strongly backwards ;

and, contracting under the double influence of shock and cold, they compressed the globe of the eye, and extended so as in a manner to enucleate it, leaving it hanging out, on the cheek, retained only by the motor muscles and optic nerve.

Reduction was easily effected; and after careful and appropriate treatment for about ten days, the functions and normal appearance were completely restored to the organ.

It is refreshing in a country where "the powers that be" seldom meddle with medicine except to prune it of both honor and emolument, to have it in our power to record an act of munificence on the part of the French government, which reflects the highest credit upon them.

Dr. Sturme, having fallen a victim to his philanthropy in sucking out the secretions through a tracheotomy tube, in the trachea of a child, the *Gaz. Hebdom.* informs us that government have provided for the support and thorough education of the unfortunate gentleman's son!!

This, with the appointment of M. F. Rouband to the well paid office of inspector of min. waters of Rougues, and the grant of the cross of the legion of honor to M. Debout, evinces the readiness of France to appreciate the services of science.—*Buffulo Med. Jour.*

CHRONICLE OF MEDICAL SCIENCE.

MEDICAL PATHOLOGY AND THERAPEUTICS.

1. *Quinine in Puerperal Peritonitis.* By M. BEAU. (*Med. Times & Gaz.*)

PARIS, June 20, 1859.

The experiments made of late years by Legroux, Monneret, Andral, Trousseau, and other celebrities connected with the French school, have proved, beyond a doubt, the beneficial influence of quinine in large doses in the treatment of acute rheumatism, and other diseases of a similar type. Recently this same medicine has been vaunted in combating certain forms of peritoneal inflammation occurring in connection with the puerperal state, and more especially by M. Beau, who, during his official connection with the Cochin

hospital, employed it in an immense number of cases where that formidable disease prevailed in an epidemic form. So marked was the success which attended his experiments, that he ultimately arrived at the conclusion, that quinine in large and continued doses, if not a specific in that disease, is at least the most valuable, and at the same time the most powerful curative agent we possess in its management and treatment. Entertaining such views in reference to the value of quinine in puerperal peritonitis, it was exceedingly natural that he should try the same remedy in a similar affection occurring apart from the puerperal state; and hence we find, that in the idiopathic form of peritonitis he has recourse to the same mode of treatment, and urges on his pupils its decided superiority over every other with which he is acquainted. In a disease of this kind, which, in spite of the most active and energetic measures we may adopt, most generally pursues its fatal course with amazing rapidity, we are always disposed to accord a favorable reception to any theory, however novel and unsupported by facts it may be, provided only we be told that its practical application has been followed by merely partial success; and we are always most agreeably surprised when, with preconceived notions unfavorable to the theory, we find ourselves confronted with a single fact which, though it may not completely establish the new doctrine, at least enlists our sympathies in its favor. Such was the surprise which we experienced in reference to the quinine treatment recommended by M. Beau, when we witnessed, for the first time a fortnight ago, a genuine case of idiopathic peritonitis treated and cured by this medicine, to the entire exclusion of every other therapeutical measure. To those who have been taught in early life that inflammation of the peritoneal membrane demands, in the majority of instances, the abstraction of blood—if not generally, at least locally—until a powerful impression be made on the system, and that this heroic plan of treatment must be followed by the assiduous exhibition of calomel until the patient be brought under the influence of this powerful and dangerous mineral, the solemn declaration of a man of high authority and great experience, to the effect that such treatment is not only useless but positively pernicious, cannot be viewed with any other feeling than that of amazement; and yet, reluctant though they be to abandon a system which has been inculcated in their youth, and which they have been accustomed to regard as strictly orthodox, they must resign themselves to seeing it demolished by another diametrically its opposite.

As a sequel to the foregoing remarks, we cannot do better than place before your readers the following case, the details of which we extract from our medical notes taken at the bedside of the patient.

A girl, 24 years of age, was admitted into the service of M. Beau, at the Hôpital la Charité, and on examination the following symptoms were recognized. Over the lower part of the abdomen there were great pain and tenderness, which were increased on the slightest pressure; the pulse was small, hard and quick, averaging about 120 beats in the minute; the skin was hot, dry and harsh; tongue furred; constant nausea, with occasional vomiting; constipation; the features were pinched, and the countenance indicated much anxiety; respiration hurried; complexion muddy, and the conjunctiva slightly yellow. The patient lay on her back, with the legs flexed on the thighs. Her previous history showed that for some weeks prior to the invasion of the disease she had been in an indifferent state of health, which she attributed to an unusual amount of bodily fatigue to which she had been subjected. In the presence of these symptoms, M. Beau at once pronounced the case to be one of acute peritonitis.

Treatment.—An emetic, composed of ipecac. and tart. antimon. was ordered, to be followed up by a purgative enema. The feeling of nausea having thus been removed, and the stomach prepared for the administration of the sulphate of quinine, this medicine was prescribed as follows: Two grammes (equal to thirty grains) were ordered to be divided into three doses, one of which was to be given every eighth hour, and a blister was applied to the lower part of the abdomen, over the spot where the pain and tenderness were greatest. After four or five doses of the quinine, its physiological effects, such as deafness, ringing in the ears, etc. began to manifest themselves; and consentaneous with these there was a manifest diminution of the original symptoms. The pulse from 120 was reduced to 110; the pain and tenderness of the abdomen were considerably subdued; the febrile symptoms, generally, were greatly modified, and the countenance became more placid. The quinine was ordered to be continued, together with the use of refreshing drinks, and on the fourth day of the treatment the pulse fell to 100, accompanied by corresponding improvement in all other respects.

In a week or ten days from the commencement of the treatment, the full effects of the quinine having been produced, that is to say, the original disease having been, as it

were, overcome, the medicine was gradually diminished, and ultimately discontinued. The pulse has fallen regularly, and the patient is now convalescent. Now, in a case like the above, implying the undoubted existence of inflammatory action of a most important membrane, the indication, according to the notions generally entertained, would be abstraction of blood, if not from the arm, at least by the application of leeches over the seat of the disease; and we venture to say, that in a similar case such would be the practice adopted by a large proportion of medical men. But according to the theory of M. Beau, instead of curing the disease, the abstraction of a single drop of blood would only increase the evil, and ultimately lead to a fatal result. In peritonitis, and in the phlegmasiæ generally, the blood, according to Beau, is poor in red globules, and consequently rich in fibrine; in other words, the increase of the latter is in a direct ratio to the diminution of the former. It is not difficult, therefore, to understand his determined opposition to depletion, and other measures calculated to lower the vitality of the blood. He regards the excess of fibrine as the real pathological condition on which this disease depends; that is to say, he regards the fibrine as the phlogistic principle, and whatever tends to augment the fibrinous portion of the blood must of necessity increase the fever and feed the disease. Consonant with these views he considers *anæmia*, which is always characterized by diminution of the red globules of the blood, as one of the principal predisposing causes of the phlegmasiæ; and when this condition of body exists, exposure to cold and wet, to sudden change of temperature, or to any of the other exciting causes of inflammation, may be followed by an attack of acute peritonitis. Quinine being the sheet anchor of M. Beau, as we have shown, in the treatment of this disease, it will not be out of place here to indicate some of the leading rules which he lays down in reference to the manner in which it should be employed, and on the rigid observance of which the success will depend. It is necessary that a decided effect be produced on the system at once, and hence the earlier the quinine is exhibited after the malady has declared itself the better. But in every case he deems it advisable to premise the first dose of quinine with an emetic; to be followed up by a purgative enema. As soon as the stomach is prepared to retain the quinine, he gives the latter to the extent of eight grains every eighth hour, and this quantity of the salt must be continued for several days in succession. It is right, however, to observe that the dose must be proportioned to

the sensibility of the patient; that is to say, it must be increased should the intoxication produced by it prove too feeble, and diminished in the event of its being too strong. M. Beau has never, in the course of his experience, had occasion to prescribe a larger dose than four grammes (60 grains) of the salt in the twenty-four hours. Even when the inflammation of the peritoneum is limited to one spot, and when the malady has been to a certain extent overcome, it becomes imperative towards the second or third day to increase the dose of the salt to a small extent, as the system becoming accustomed to it, the quinine in its original dose would not suffice to maintain the mastery over the disease. For the same reason the medicine must not be diminished too rapidly, nor discontinued too early. Beau states that he has seen cases in which, up to the eighteenth day of the disease, he could not suspend the medicine without such suspension being followed by a recurrence of the febrile symptoms. Should the stomach from excessive irritability reject the quinine (by no means an uncommon occurrence), it should again be administered in some other form, so that if one form does not suit, another may. When, notwithstanding the form in which it is administered, the stomach obstinately refuses it, the quinine may be given in the form of enema, as experience has proved that its absorption readily takes place when given in this manner.

2. Treatment Preventive of the Sequelæ of Measles and Scarlatina.

Many precautions are adopted by physicians to prevent the unfortunate sequelæ of these diseases, and the confinement to the sick chamber for several weeks after convalescence ranks among them. To avoid this, M. Scoutetten of Metz has devised the following method, which we find in the *Gazette Hebdomadaire* for April 1, 1859:

As soon as convalescence commences, that is to say, when the skin is no longer red with the eruption, he rubs over the whole body slightly warmed oil of sweet almonds or olive oil, and puts the patient in bed again, for two hours. The next day he gives him a tepid bath for an hour, then places him in bed, and if the skin is very dry, a new friction with the oil is made. These two frictions and one bath are usually enough to remove all danger. Still, in severe cases, it is well, to avoid any risk, to repeat the means indicated from time to time, until the skin regains its suppleness. These

precautions taken, convalescents may be permitted to go out without fear of bad results.

In order to justify this method and explain its importance, it is necessary to remember the state of the skin in infants affected with measles or scarlet fever. At the commencement of the disease, the dermis is red and swollen; during convalescence the tissues return to their normal condition, but the epidermis, which has been distended, not being elastic, becomes detached, and falls off in the shape of fine powder when the attack of measles has been light, or is removed in large scales when it has been severe, and especially when the eruption has been that of scarlatina. The skin beneath is dry and harsh; perspiration and transpiration are badly performed, and the functions of this important organ are impeded or suspended. When the skin acts badly, the kidneys and the mucous membrane of the air passages or of the digestive apparatus undertake to supply its place; thence arises a thick, sedimentous, and sometimes albuminous urine, severe diarrhœas, which terminate in emaciation and death; obstinate coughs, sore throats, croup, pneumonias, pleurisies with effusion; finally, serous infiltrations into the areolar tissue of the limbs, or accumulations of liquid in the abdomen, and in other cavities where serous membranes exist. These severe symptoms occur after an exposure to cold of the skin, which inflammation has rendered more sensitive, and the functions of which are interfered with by an inert epidermis, which obstructs its pores. The object of the treatment proposed by M. Scoutetten is to oppose the causes of these symptoms.—*Am. Med. Monthly.*

3. *A Case of Convulsive Sneezing.* By Dr. MOSLER.

Among the instances related by Romberg in his "Manual of Nervous Diseases," are three; in which the seat of the reflex irritation seemed to have been in the trunk of the fifth pair, while in the others it was located in the uterine or intestinal nerves; and Brodie relates a case in which it was attended with irregular menstruation, and alternated with hysterical symptoms. Frank relates some cases in which spasmodic sneezing was connected with pertussis. The present case is related by Dr. Mosler of Giessen; and in it this form of convulsive affection seemed to have been intimately connected with disease of the right ear.

The patient, a young woman, aged 22, of scrofulous habit, had suffered for many years from disease of the right ear.

After considerable amendment, she began again, in February 1856, to complain of severe earache, with faintness, etc., for which cataplasms, blisters, etc. were ordered, without effect. On March 6 she applied at the Giessen clinic, on account of the appearance of a new symptom. While the patient was in vain expecting the menstrual discharge, the pain increased in the ear, and from the middle of the day of March 5 she was seized with reiterated sneezing, accompanied by such slight pauses as to entirely prevent her either eating or sleeping; and by the violence of the concussion giving rise to very violent pains in the head, and over the entire thorax. Immediately on her admission she excited every one's attention. Thirty attacks of sneezing rapidly followed each other, accompanied with much noise and violent motion of the upper part of the body; and then a pause of half or at most of one minute, allowed the patient to recover herself, and sometimes even to speak. No effort of the will could arrest the paroxysms. The mucous membrane of the nares and of the fauces was very dry and not remarkably reddened. The right ear was much swollen, and very tender to the touch, and when firm pressure was made upon it the attacks were aggravated. There was no discharge, but a bad smell proceeded from it. Although the attacks of sneezing had now continued for twenty hours, the patient's strength was satisfactory, her pulse, 120 to 130, being full and strong. Mustard in the form of footbath and of cataplasm to the nape, together with frequent doses of Dover's powder, were ordered, but without any effect; and although the attacks were stopped during a half hour's narcosis from chloroform, they returned afterwards stronger than before. Emetics, and a repetition of the mustard, together with anodyne applications to the ear, were now tried. All were without avail, the attacks still continuing as frequent, although the patient was yet able (twenty-eight hours) to come to the clinic, which was about ten minutes' distance from her home.

On March 7 the attacks ceased from 10 to 12, but then returned more violently than before; and no relief followed leeching behind the right ear, blisters to the nape, and large doses of morphia. On March 8, the attacks had again become so severe, that she was brought to the clinic again in the evening. She was placed in a warm bath, cold applications being kept to the head, and cold and warm douches poured alternately along the spine. After this treatment had been continued during one and a half hour, in spite of frequent fainting, and the secretion of sweat having become

considerably excited, the attacks appeared less seldom. After the bath the cold application was kept to the head during three hours, and two doses of morphia (gr. $\frac{1}{2}$) were given. The sweat poured down, and during these three hours she only sneezed ten times; and the convulsive sneezings, after lasting eighty hours, then entirely disappeared.

Dr. Mosler calculates that she must have at least sneezed during the duration of the affection from 48,000 to 50,000 times; and the entire neighborhood was, in fact, alarmed at the violence of the paroxysms. When admitted to the clinic, in order not to disturb other patients, she had to be isolated in a distant chamber. In spite of the cessation of the attacks on the night of the 8th, she could not, on account of the excitement and faintness, sleep, and next day she was powerless. The pulse was very feeble, but only 74, and there was no fever. She had much pain in the right side of the head and in the region of the diaphragm, as well as frequent nausea or vomiting. However, sleep gradually returned, and by repetition of the warm baths the sneezings were entirely kept off until the 12th, when they returned, in consequence of exposure to a draught of air, which led to the arrest of the discharge from the ear that had begun to flow. Next day the sneezing diminished, again to return, and so on at intervals (sometimes to the extent of sneezing thirty or forty times in a minute), until March 26, when she was well enough to leave. Exactly a month after her first attack, the sneezing again returned, the menses also being absent, and remained as obstinate as before, yielding at last to the baths. The paroxysms of sneezing often reappeared at long intervals, and their relief seemed much connected with the presence of discharge from the ear.

Virchow's Archiv.

4. *Is there no Way of radically destroying Ascarides?*

An interesting discussion has lately taken place in the Academy of medicine of Paris, respecting the best remedies for the cure of persons affected with ascarides in the rectum. The subject is one which I venture to think deserves more attention than is usually accorded to it; and for the reason that, in a very great number of cases, the treatment hitherto employed for their destruction appears to be incapable of entirely eradicating these creatures. Küchenmeister seems to admit that their extirpation is impossible; he tells us that he himself has long suffered from their presence in his own

person, and has not been able to free himself from them. Dr. Watson relates incurable cases; most observers also have probably met with cases in which their efforts at a perfect cure were unavailing. Such a conclusion, also, I regret to say, seems to be what their experience has brought our French brethren to on this subject. Now really it does seem hard to think that our art is unable to cope with these wretched creatures; and especially so, when we reflect upon the actual misery which their presence often causes. Will you, therefore, allow me, through your journal, to ask of others the benefit of their therapeutical experience in the cure of this affection? The experience of Dr. Hervieux leads him to this conclusion: That castor-oil and simple daily glysters are the only useful remedies known to us at the present moment. He considers the affection incurable. So also does Dr. Blacke; and he relates a number of cases, in all of which the art of medicine failed to cure. One was the case of "a fashionable lady, remarkable for her beauty, in whom every kind of treatment failed. When she went into society, she was forced to sit on cool, unstuffed chairs, in order to diminish the painful sensations caused by the ascarides." Dr. Legroux was convinced that mercurial ointment dissolved in water, and given as a glyster, would destroy these animals; he had used such an injection in cases where he had in vain used all other remedies; he did not, moreover, mean to assert that the ointment was a specific. Such were some of the opinions given on the occasion referred to in the French academy. I think that whoever would give a satisfactory answer to the following questions, would confer a great boon on the community: How high up in the intestinal canal do ascarides live and breed? What injections will kill the animals without injuring the intestine? Do the injections which destroy the animals, also destroy their ova? Is there any proof that these animals reside higher up in the intestine than injections will reach? Why do they come down towards the anus, especially at night and in the evening?

SIC.

5. "*Bibron's Antidote.*" By D. O. C. HENRY, M. D., Atlanta, Georgia.

In traveling through Southwestern Georgia in April last, I happened at the house of Col. B. Shortly after my arrival, he informed me that one of his most valuable negroes had

just been bitten by a large rattlesnake (*crotallus confluentus*) while returning from the field. The negro was bitten on the ankle of the left leg. The snake inflicted a very deep wound, and within five minutes after the bite, before much pain or swelling had ensued, I administered one dose of Bibron's antidote, in two tablepoonsful of brandy, and the symptoms almost immediately disappeared. One hour after the bite, pain and swelling returned, attended with considerable throbbing. I repeated the antidote, and in less than fifteen minutes the ankle had regained its natural appearance—all pain and swelling having vanished. Before returning, I repeated the dose a third time. In the morning he was perfectly well, and resumed his duties in the field.

Having read of the wonderful cures performed by Bibron's antidote, I was determined to test its virtue in the first case that I should be called upon to attend. It being generally known that this part of Georgia was numerously infested with these dangerous reptiles, I improved the opportunity, and procured a bottle of Bibron's antidote. I had the good fortune to test its specific qualities, and augur for it a world-wide fame, and confirm its claim to the unreserved patronage of the Æsculapian legion. The antidote in question is prepared according to the following recipe, to wit:

"*Bibron's antidote.*"—℞ Potassi iodide, grs. iv; hydrarg. chloridi corros., grs. ij; bromini, 3v. M. Dose, gtt. x, in two tablepoonsful of brandy, repeated if necessary.

Atlanta Med. Journal.

SURGICAL PATHOLOGY AND OPERATIONS.

1. *On Gonorrhœal Rheumatism.* By M. ROLLET.

Notwithstanding what has been written on the subject, this affection is not universally admitted; and Professor Thiry of Brussels has recently formally denied its existence, there being, in his opinion, no rheumatism that can be legitimately called gonorrhœal, but only instances of arthritis coinciding with gonorrhœa, without any relation of cause and effect. M. Rollet of Lyons has, however, just published a memoir, in which he maintains the reality and peculiarity of this form of rheumatism. First, the frequency with which gonorrhœal subjects become affected with rheumatism

is greater than it would be if it were a mere coincidence; and next, there is the repetition of the rheumatism so often met with in a given individual on the occurrence of a new, or the revival of an old gonorrhœa. While, too, it resembles ordinary rheumatism, it differs from it markedly, not only in its cause, but in the fact of its rarely affecting the muscles, nerves or viscera, and, above all, the heart. Another remarkable difference consists in its usually being mono-articular, or at least extending to but very few joints—the knee joint being that which is much the most frequently attacked, and then the ankle, the other joints suffering much seldomer. Then, again, this form of rheumatism is often accompanied by an iritis, the seat of which is preferentially the anterior layer of the iris, and sometimes the serous membrane lining the posterior surface of the cornea, i. e. Desmours's membrane, either wholly or in part.

In the absence of pathological examination, it is difficult to say in what the lesions of gonorrhœal rheumatism differ from those of ordinary rheumatism; but there can be little doubt that they are not identical. At all events, it is certain that the inflammation becomes much more specially and more strongly fixed in the synovial membrane in this form of rheumatism than in the other, and hence the marked tendency to hydrarthrititis which has struck all observers; and when it does not affect the joints, it exhibits a preference for the serous membranes, the sheaths of tendons, accidental bursæ, and Desmours' membrane. Clinically, gonorrhœal rheumatism is distinguished by the less acuteness of the inflammatory symptoms, whether general or local, and by a less tendency to suppuration; but, on the other hand, there is a greater tendency to ankylosis, especially in the small joints, and, in predisposed subjects, to white swelling. The disease, again, is excessively rare in women, if it is observed in them at all.

Gonorrhœal rheumatism seems to depend upon its special causes; for the predisposing and determining causes of common rheumatism have seemed to be without influence in the great majority of cases. The abundance of the discharge appears to be the most general condition upon which its production depends. Prior to the rheumatism the discharge has usually been acute, and sometimes very acute; or having become chronic, has revived again. The duration of the discharge does not seem to exert the same influence. When the rheumatism has become developed, it exerts a revulsive effect upon the discharge, this usually sensibly diminishing, although in a third of the cases it remains sta-

tionary. M. Rollet has seen it become more abundant only twice, and suppressed but once. The doctrine of metastasis has no foundation; and in treating the disease we must not seek to reproduce the discharge, as this doctrine would indicate; but, on the contrary, endeavor to arrest it as rapidly as possible, inasmuch as, owing to the dependence of the rheumatism upon the urethritis, the slightest exacerbation of the latter might be attended with aggravation of the synovitis. Therefore, copaiba and cubebs, together with injections or cauterization of the canal, should be resorted to.—*Am. Med. Monthly.*

2. *Case of Spina Bifida treated by Collodion.* By Dr. BEHREND.

A strong, healthy child was brought to Dr. Behrend when seven weeks old, having a swelling over the last lumbar vertebra and the upper part of the sacrum. It was the size of a small orange, of a roundish form, with a broad base, and disappeared under pressure of the finger. The skin over it was very delicate, transparent, and of a palish red. Pressure which caused the disappearance of the fluid seemed to give the child pain, and induced distortion of the features, which disappeared when this was removed. The aperture in the vertebra could be distinctly felt. The author resolved to try the effect of compression by collodion; and in order that its action should not be too suddenly energetic, he mixed it with some castor oil in the proportion of three parts to six of collodion. On July 2 the whole of the surface of the tumor and some distance beyond were painted with this. No bandage was applied, and the parts were left freely exposed to the air for an hour and a half, a firm but yet soft and yielding covering having formed over the tumor. Some wadding and sticking-plaster were now applied. Next day some amount of contraction was thought to have taken place, and a penciling with 8 parts of collodion to 2 of castor oil was performed. By the 7th of July a remarkable degree of contraction of the tumor had taken place, and it was painted with pure collodion. On the 8th there was a slight rupture observed in the shriveled wall of the tumor, and some moisture issued; but on close examination it was believed that the rupture only implicated the layer of the collodion, and did not penetrate within the tumor. This had now diminished to the size of a filbert, and became much flattened. A small plate of caoutchouc, wrapped in muslin, was laid over it and kept on by a roller. This was kept on for three

weeks, when nothing else was visible than the thick skin, stretched tightly over the aperture in the spine, and from which the collodion had long since become separated. The plate was directed to be worn some time longer yet, and the child when seen October 12, seemed well and hearty, and fully developed—the large fontanelle, which had been too open, having become diminished in size. No trace of the tumor was visible, some thickened skin and a subcutaneous mass of almost cartilaginous hardness supplying its place, allowing the edges of the bony aperture only to be very imperfectly felt. The author thinks that probably the collodion might have been used at once without the castor oil, when its influence would have been more powerful; and he suggests, under certain circumstances, the combination of lead or tannin with it, in order to produce a more immediate effect on the wall of the tumor. In the present case he considers that some calomel which, together with cold applications to the head, were employed on account of a head affection which threatened to come on during the treatment, may have contributed to the rapid absorption of the fluid.—*Journal für Kinderkr.*

3. Ricord's Recantation.

The Academy of medicine of Paris, at its sitting of the 31st May, witnessed a scene which the editor of the *Revue de Thérapeutique* calls an event. It was a partial renunciation on the part of M. Ricord of one of the articles of his medical faith, for which he has long contended against the greatest odds. M. Ricord has always been a firm supporter of the views of Hunter, in relation to the non-contagiousness of secondary syphilis, but the event of the academy referred to shows that his views in this respect have undergone a change.

In October last, a letter from the minister of public works, &c. submitted to the academy the following questions:

1. Are the symptoms of secondary syphilis contagious?
2. Regarded as contagious, are the effects in infants at the breast different from those observable in the adult?

These questions were referred to a committee, composed of MM. Gibert, Velpeau, Ricord, Devergie and Depaul, who reported through M. Gibert, at the session of May 31—that

1. There are secondary or constitutional symptoms of

syphilis manifestly contagious. At the head of these it is necessary to place the mucous papule or flat tubercle.

2. This proposition applies to the nurse and the infant at the breast as well as to other subjects, and there is no reason to suppose that in infants at the breast the results of these symptoms have properties different from those observed in the adult.

Answered so categorically, and enclosing in its terms so complete a denial of the Hunterian doctrine of non-contagion, it was necessary for the great expounder of Hunter to qualify his renunciation, which he did in a long address from the tribune of the academy, closing as follows:

Therefore, I conclude that the report which should be sent to the minister, in reply to his demand, should be cautiously expressed, admitting, if you will, the possibility of the contagion of the secondary symptoms, but without specifying any thing more at present.—*Fiat Lux.*

4. *On Local Sweating of the Eyelids.* By Professor A. VON GRAEFE.

During several years' practice, Professor Graefe has observed this occurrence in four instances to an excessive extent, and in several others in a lesser degree. To superficial observation these patients appear to be the subjects of an ordinary conjunctivitis, with secondary intermarginal and palpebral excoriation; but the disproportion between the slight degree of the conjunctival irritation and the great amount of secretion on the surface of the eyelid is at once obvious. The outer surface of the lids, and especially of the upper one, is somewhat reddened, and permanently covered with a layer of fluid, the moisture being confined within the limit of the orbital ridge. In the author's first case, immediately after drying the lid, another thin layer of fluid was reproduced, so that with every care the skin could scarcely be kept dry for a few minutes. The fluid at first, too, was quite transparent, and only became turbid some time after its deposit. Examination with a lens showed that it issued from many minute, punctiform apertures in the skin, and gradually collected into drops. When we consider the rich supply of the lids with sudoriferous glands, no surprise need exist at this local ephidrosis. The conjunctivitis in these cases is only secondary, arising from the flowing of the sweat from the upper lids in at the angles of the eyes. In two of the cases the affection was connected with general

ephidrosis, all circumstances, such as active movement, inducing especially the sweating of the eyelids. It is an exceedingly obstinate affection, and is liable to be mistaken for conjunctivitis. Local applications, as lead, or nitrate of silver lotions, diminish the secondary irritation of the skin, and temporarily heal up the excoriation induced, but exert no influence on the secretion. Ointments usually increase the evil. In one case smearing the lids with *pix liquida nigra*, after healing the excoriations, was very useful. Those general means seem to be of great consequence in this affection which influence the activity of the skin, such as cold bathing, frictions, &c.—*Graefe Archiv.*

5. *Rupture of the Spleen.*

When rupture ensues of any of the solid abdominal viscera—such as the liver, the spleen, or the kidney—death usually takes place in a short time from hemorrhage, if the shock of the injury itself has not already proved fatal. It is not always an easy matter to make out the true nature of the mischief in such cases, especially when no external evidence of injury is to be seen. A curious case in illustration was admitted into University college hospital on the 13th ult. The patient was a man upwards of sixty-five years of age, who was accidentally knocked down in the street by a cab, and trod upon by the horse over the stomach, as was at first supposed. He lived twenty-two minutes after his admission, under Mr. Erichsen's care, the cause of death being set down either to the shock of the injury, or to the rupture of some important internal organ. He was totally unconscious from the time of the accident to his demise, and never spoke a word. We were present at the autopsy, on the 14th of June, made by the house surgeon. A large quantity of liquid blood was found in the abdomen, which, on careful examination, was observed to have come from the spleen, which was greatly torn, and had a cavity in its substance nearly as large as the fist. Several of the ribs corresponding to the situation of the spleen were broken. It is very remarkable that with such serious injuries not the slightest wound or bruise could be detected on the skin.

Med. Times & Gaz.

6. *Lithotomy per Rectum.*

This operation, a unique one, we believe, in this country, and which has been out of vogue for some years in Europe, was performed in Brooklyn on Monday, the 18th inst., by our friend and collaborator, Dr. Louis Bauer, of that city, in the presence of a number of surgeons. A calculus two inches in length, was extracted, and the incision closed by the silver suture—Dr. Sims performing this part of the operation.

A medical friend of this city, who saw the patient after the operation, informs us that no urine escaped by the wound at any time after its closure, notwithstanding the fact that by the misplacement of the catheter, urine accumulated in the bladder at one time to the amount of nine ounces. On Wednesday there were no blood or pus corpuscles in the urine, and on Thursday, urine was passed naturally for the first time, with four natural evacuations of the bladder on Friday.

The operation has, we are told, caused great excitement among the profession of New York, not among the least interested in its success being the venerable Dr. Valentine Mott. We learn, moreover, that some of the wiseacres of Bellevue hospital have declared against it, on the ground that Dr. Sims cannot always be present to apply the silver suture! A detailed account of the operation is being prepared for publication in our pages.—*Med. Rep.*

7. *Novel Substitute for a Female Catheter.* By T. W. W. SMART, M. R. C. S.

The letters of Dr. Duke and Mr. Park in the *Lancet* of 12th and 19th instant, have brought to my remembrance a case which occurred in my practice many years since, in which I made use of a "novel substitute." Visiting one day a female patient suffering with paralysis, at the distance of six or seven miles from my residence, I found her laboring under the retention of urine. Unfortunately, I had no female catheter in my pocket, and so, under the stimulus of necessity, I adopted the following expedient: Whilst reflecting on what was to be done, I perceived in one corner of the bed chamber a bundle of gleaned corn, and the thought suggested itself, cannot I extemporize a catheter in one of those stalks of wheaten straw? So, selecting a well adapted specimen, I reduced it to a proper length, and having shielded

the sharp edge with a coating of sealing wax, introduced it without any difficulty, and, to my great satisfaction, relieved the bladder.—*Penn. Journal of Med.*

8. *Iron Thread in Vesico-Vaginal Fistulæ.*

Since last autumn Professor Simpson has operated on fourteen cases of vesico-vaginal fistulæ. The last two are proceeding favorably in all respects, but the operation in them is too lately done to admit yet of perfect certainty as to the ultimate result. Out of the remaining twelve, in three the operation was only partially successful, and will require to be repeated a second time. In the remaining nine the fistulæ were closed by the first operation. Dr. Simpson has always used the common blue, annealed, iron wire (No. 32 of the ironmonger's gauge) as his suture-thread. In his last six cases he has dispensed with the assistance of all clamps, buttons, or splints, and has merely brought together the vivified edges of the fistulæ, some of which were very large, with deep and closely-placed stitches of the iron thread. All these six cases have proved successful. The two cases at present under treatment have been operated on in the same way.

9. *Traumatic Diabetes.*

Dr. Plagge reports a case brought on in a young man by a blow on the occiput, which, besides a swelling, seemed to produce no effect. In two or three days, however, the youth was seized with amblyopia, thirst and craving for food, while he passed a large quantity of urine which yielded much sugar. There was no uneasiness about the liver nor jaundice. Tannin and opium together, with flesh diet, were prescribed during a week, with little effect, three or four quarts of urine being passed daily. Under the use of bicarb. of soda, with flesh diet, however, the sugar gradually disappeared from the urine, although this fluid continued to be passed in too great abundance, as simple polyuria, for two months longer.—*Virchow Archiv.*

10. *Chloroform in Traumatic Tetanus.*

Dr. Taramelli relates the case of a woman, aged 36, who was brought into the Milan hospital, on the 6th October, on

account of lacerated wounds. On the 22d she was seized with symptoms of tetanus, which soon assuming an important character, she was ordered chloroform inhalations six times per diem, without much amelioration until the 5th November. The chloroformisations were then repeated only four times, and after a while, three times and twice a day—the whole quantity of chloroform consumed amounting to eight ounces, of which some was lost during its administration. She completely recovered.—*Annali Omodei*.

11. Remarkable Luxation of the Eye.

M. Reyssie relates the following case :

During a conflagration the patient received the full stream from a fire-pump in his face. The column of water struck the eyelids of the right eye with violence, thrusting them strongly backwards. Contracting under the double influence of the shock and the cold, they forcibly compressed the globe, forcing it out of its orbit by a kind of enucleation. The author saw the patient in an hour, and found the eye hanging out, retained only by its muscles and the distended optic nerve. Its reduction was very easy. Local antiphlogistics and aperients were employed, and in the course of ten days he saw as well as before the accident. Seen thirty months after the accident he continued quite well.

Gaz. des Hôp.

12. Case of Needle Swallowing.

A young woman accidentally swallowed, during an inspiration, a sewing needle, which she held between her lips. This occurred September 14. On December 28 she drew attention to a small, but very painful swelling at the anterior part of the left side of the thorax. In this the needle could be plainly felt. It lay between the sixth and seventh ribs, at a short distance from the lower end of the ensiform process of the sternum. It was extracted by means of an incision from among some strong adhesions by which it was surrounded. For two or three weeks the girl had suffered from a dyspnoea that could not be accounted for; but as this ceased as soon as the needle could be felt under the integuments, Dr. Siegmund, who reports the case, believes that it was produced by the passage of the needle through the diaphragm.—*Virchow Arch.*

OBSTETRICS, &c.

1. *On the frequent Use of the Forceps.* By Mr. HARPER of London.—Discussed at the Royal College of Surgeons. (Med. Times & Gazette.)

The author first examined the question—What are the ill effects, either to the mother or child, produced by the forceps?—and endeavored to show that not one of those usually ascribed to them could properly be attributed to the use of the instrument itself, but only to its abuse. He then showed, from various authorities, that the causes of maternal death after their use were the same as after unassisted tedious labor, and, therefore, that their origin must be sought in the delay, rather than in the use of the instrument, especially so long as it was only applied in the extreme cases of tedious labor. The causes of the large foetal mortality are likewise to be found in the long continued and violent efforts made by the uterus on the child previously to its application, and which are more fatal than the compression of the instrument in the proper direction. He then showed, from the cases of unassisted tedious labor reported by Johnston and Sinclair, that mere duration alone, without any abnormal circumstance, is a main element in rendering labor dangerous—fully confirming the law laid down by Dr. Simpson, and which holds good both in mother and child. He went on to examine the same works, and found that both the maternal and foetal mortality in their cases was greater in tedious labor than in their forceps cases. The maternal mortality in their craniotomy cases was greater than in either. Having spoken of the general powers of the instruments, as extractors and rectifiers, he then examined them as compressors, in order to discover how much compression might safely be exercised upon the foetal head. He mentioned some experiments of his own upon children still-born after footling, and other such cases, where he applied forceps immediately after birth, and fastening the handles together with india rubber springs, had left them on for a time, with the effect of much altering the form of the head, and diminishing its diameter, without any apparent injury to the brain. These cases, of course, only bear slightly upon the question of compression previously to the child's death. The brain must be pressed in a direction parallel with the base of its anterior lobes, to produce the dan-

gerous effects spoken of by Radford and others. In practice this is really not so easy, as it is to apply them so that the pressure may be excited upon the prominent parts of the frontal bone anteriorly, and the junction between the middle and lower thirds of the occipital bone posteriorly. When various statistical tables to prove the proposition, that "the earlier and more frequently the forceps are applied in proper cases, the more maternal and foetal lives are saved," he separated all arm, breech, footling, and placental presentations, together with their maternal and foetal mortality. It is necessary, also, to separate puerperal fever cases and those in which death arose from other labor causes, or from constitutional causes coincident with the occurrence of labor. The necessity for thus dealing with the statistics, in order to arrive at a just conclusion, prevented his using all the obstetric histories which have been published, as they do not all contain these data. He examined Collins, Hardy and M'Clintock, Johnston and Sinclair, and his own statistics, and from them considered the proposition confirmed and proved. He concluded by hoping that the fellows would give his various propositions and statistics their calm consideration, and not reject them because the results were startling, and contrary to general opinions.

Mr. Harper, in answer to questions from Dr. Barnes and Dr. Druitt, stated that in his private cases there had been no maternal mortality; there was a mortality from all causes of 1 in 500. The class of cases was mixed; 4,000 and upwards were in a mining district.

Dr. Tyler Smith thought it would be satisfactory to the society if the facts related by the author were a little more fully substantiated, for the following reasons: those facts were peculiar. 6,000 cases was a large number for one man to have attended, amounting to 300 per annum for twenty years. The results were gratifying in an extraordinary degree. There were 300 forceps cases and only 2 deaths. Usually the deaths were 1 in 20. In Johnston and Sinclair's recent work, with the worst cases eliminated, the mortality was 1 in 20. In Mr. Harper's cases it was stated to have been 1 in 250; and he appeared to have used the forceps with extraordinary frequency—once in 26 cases. Believing that the forceps might be much used, he yet considered this proportion far too frequent. There was an advantage in the statistics from public institutions, that they were perfectly reliable and open to investigation. He would certainly like to have some guarantees of the practice detailed in the paper. The consultation practice detailed was large.

Dr. Murphy was old fashioned and sufficiently "parrot-like" to repeat the adage, that a "a meddling midwifery is bad." The forceps had been used by the author of the paper to an unwarrantable extent. He remarked on the absence in the paper of details as to the causes producing the prolonged labor. False figures were infinitely worse than false facts. He would ask, had the fellows met with the high mortality from tedious labors, in their every day practice, which was laid down by the author? In face presentations the forceps was not necessary. Nature required time, and time should be given her. He believed that more lacerations were caused by the forceps than in any other way.

Dr. Barnes observed that in the Royal maternity charity, the statistics of which he would adduce, the mortality was very low: in 10,000 cases the mortality was 1 in 400, or 1 in 500, rarely over 1 in 400. In that charity the kind of practice detailed by Dr. Murphy was faithfully carried out. Nature is allowed to act, and the forceps are rarely used. He thought that, to serve a useful purpose, the author should have divided his facts into two kinds—those in which he did not, and those in which he did use the forceps extensively. Disposed to go as far as any one in reason, he still thought the use of the forceps once in twenty-six cases was far too frequent.

Dr. Granville had formerly much experience, and in many thousand cases directly or indirectly under his control he believed the forceps had been used only fifty times. He was astonished both at the number of cases and at the number of applications of the forceps.

Mr. Harper, in reply, stated that many questions put by fellows would have been unnecessary had there been time to read all parts of the paper in extenso. With reference to the facts upon which comment had been made, he could only say that they were as stated. He had practiced until lately in a large mining district, where it was not at all unusual for one medical man to put 500 women to bed in one year.

2. *On the Identity of the Meconium and Vernix Caseosa.* By
Professor FORSTER.

The general opinion respecting the meconium is, that it consists in a mixture of bile, intestinal mucus and intestinal epithelium; but microscopical examination shows that be-

sides the coloring matter of the bile, it is composed chiefly of the vernix caseosa. For the most part it consists of small flat scales, which present all the characteristics of horny epithelial plates completely corresponding to the horny scales of the vernix. Under the microscope, the meconium only differs from the vernix by the presence of the yellow coloring matter and the smaller number of fat globules. A proof of the identity is its containing minute hairs in just the same numbers as the vernix, which, indeed, without the microscope, may be separated from it by a needle. The horny scales could have no other source than the vernix, for the stomach and intestinal canal are lined with cylinder epithelium, and the mucous membrane of the mouth and oesophagus does not give rise to them. Besides these scales, we observe in the meconium fatty globules of different sizes, crystals of cholestearine, and irregular yellow and brownish clodlets, which give the dark color to the meconium, and are doubtless biliary coloring matter. The fatty globules are evidently of cutaneous sebaceous matter, and the cholestearine is in part derived from the bile, and in part from the decomposition of the vernix during its passage to and deposit in the rectum.

The fœtus swallows from time to time some of the liquor amnii having the vernix swimming in it, and the hairs and horny scales pass unchanged along the intestinal tract. Whether any of the sebaceous matter is taken up by the lacteals, may perhaps be determined by microscopical examination of the intestinal villi of the fœtus; and it would be interesting to determine, by numerous examinations of the intestinal canal, at what period this swallowing of the liquor amnii commences. As the elements of the vernix are only suspended in the liquor in small quantities, a large quantity of this must be gradually swallowed to lead to the amount of meconium usually present. The water must be soon absorbed from the stomach, as it is never found in it. The greater portion is probably excreted by the kidneys, and again reaches the amnios. That it in nowise contributes material to the nourishment of the fœtus, has been shown by Bischoff; but that does not prevent it serving some purpose in the economy. A regular examination of the entire contents of the intestinal canal in numerous fœtuses of different ages, is required to elucidate these points; and especially would such examination be of interest in the case of monsters. That the acephalæ have no meconium, has long been known, and has usually been attributed to the absence of the liver. This would, however, only explain the ab-

sence of its dark color; and the meconium will only be wanting, when, by reason of the malformation of the intestinal canal, the reception and transport of the liquor amnii holding the vernix caseosa are prevented.

Wien Wochenschrift.

3. *Detection of Pregnancy by Ergot.*

MESSRS. EDITORS—I do not recollect of ever having seen the use of ergot recommended for the purpose of detecting pregnancy in its earlier stages. For many years I have been in the habit of administering small doses of this drug for this purpose, and in my hands it has seldom failed of furnishing the evidence sought. The specific action of the medicine is not felt by an unimpregnated womb, while the gravid uterus, I believe, almost invariably responds to its action by some uneasiness in the back, but more particularly by pain in the upper part of the thighs, sufficiently to enable you to diagnosticate the case with great certainty. I have in many doubtful cases trusted to this test, and have very seldom been disappointed in my diagnosis. I will only add that the ergot can be given with entire safety in sufficient quantity to accomplish the object sought.

Your ob't serv't,

W. W. C.

Middleboro', March 29, 1859.

Boston Med. and Surg. Jour.

4. *Scarlatina after Parturition.*

Dr. McClintock read a paper before the association of the fellows and licentiates of the King's and Queen's College of Physicians in Ireland (Feb. 2, 1859), on the occurrence of scarlatina within eight days after confinement. The mortality in such cases has been put down as two out of three, or over sixty-six per cent. Of twenty-eight patients treated in the Rotunda hospital, seven died, or about twenty-five per cent. Dr. McClintock considered the advent of this exanthem supervening on delivery one of the most fatal complications of the puerperal state. The earlier the appearance of the rash, the more fatal; the same rule having applied to puerperal fever, whilst epidemic in this city in 1854 and 1855. He referred to the peculiar acceleration of

the pulse in these cases, to the eruption being occasionally tardy in evincing itself; and, as regards the treatment, his experience leads him to attach great importance to the early exhibition of stimulants in these cases.—*Dublin Hospital Gazette.*

HYGIENE.

Great Mortality of Children in Russia.

A Russian journal, the Rousky Dnevnik, has lately presented the profession with some important information respecting the mortality of children in Russia, the dislike of the peasantry to vaccination, and the supreme contempt with which the lowest of this class regard the admonitions and the assistance of a medical practitioner. The Russian peasantry seem generally, indeed, to look upon a doctor with distrust; and in cases of illness they mostly prefer, we are told, the assistance of the village sorcerer. Witchcraft, therefore, must be as popular with the poor Sclavonians as it would appear to be in the enlightened county of Essex, where it is said that we may find two "witch doctors" within hail in a single village, not only well known and in good practice, but subject, in regard to their merits and talent, to a discriminating estimate in public opinion. And, on the other side of England,—“Think!” cries a Somersetshire carrier to his surprised interrogator, when, disdaining veterinary aid, he hies to the wise woman of Somerton about his ailing cattle,—“Think! I do know ut! What d’ye mean to say that a man could have four hosses die in one day without nothing done to ’um? There’s no more the matter with them hosses than there is wi’ you or I.” The ignorance and superstition of the lower classes in Russia have a most fatal influence upon the management of children, of which the following facts will afford a melancholy example:

Last August, small-pox of a very malignant character broke out in several villages of the government of Voronetz, making fearful ravages amongst children of both sexes. The activity of the disease was considerably heightened by the humid climate, the uncleanness of the people, the bad quality and scantiness of food, and the ignorance and negligence of mothers in the treatment of the patients. A phy-

sician residing in one of the infected districts found a young child suffering under a severe attack. He offered his assistance to the mother, who, obstinately rejecting it, replied that, "if it were written that her child must die, no doctor could be of any use." The miserable state of the infant, however, at length caused the woman to yield, and avail herself of that which she at first refused, saying, "Well, you may try to save him, and may God help you!" On being asked why the child had not been vaccinated, the medical man was informed that it had been purposely secreted from the authorities when the latter visited the village for the performance of the operation. Vaccination, the woman observed, was an impious practice, and she should not charge her conscience with the sin of making her child a victim to it. "But," replied the medical officer, "you could have been compelled to have had your child vaccinated." At this the woman shook her head sorrowfully, and wept; whilst another, who happened to be present, affirmed that if any medical man were to vaccinate her child she would suck out the matter, or even bite out the piece of flesh, to prevent the "diabolical operation" taking effect.

We very much fear that in some parts of our own island, amongst a very degraded set, much the same opinion is held as to the propriety and utility of vaccination as flourishes upon the northern steppes. Whilst this class, whether slave or kelt, obstinately refuse to listen to the right charmer, "charm he never so wisely," they yield a willing assent to the assertions of credulity and superstition. A pig was said to have been seen one day last summer by the assembled members of a "highly respectable family" regaling itself with fruit in the upper branches of a cherry-tree; whilst, through the malice of an envious neighbor, the wife of a Norfolkshire yeoman was "harassed about night and day," continual worrying like wind "teasing her stomach," and like a sow with all her little pigs a "pulling her to pieces." We all know the axiom of the poet—

"A little knowledge is a dangerous thing;
Drink deep, or touch not the Pierian spring;"

but perhaps all are not provided with so apt an illustration of it as the following statement of the *Saturday Review* will prove to be:

"A clergyman not long ago was earnestly pressing upon the attention of a dying Lincolnshire boor certain doctrines which have presented difficulties to cleverer heads under more favorable circumstances. 'Wut wi' faath' (was the

faint response given in the sick man's native Doric), 'and wut wi' the earth a turning around the sun, and wut wi' the rail roads a fuzzin and a whizzin, I'm clean muddled, stonied, and bet;' and so saying he turned to the wall and expired."

The indifference of the Russian peasantry with respect to their children exceeds all belief. They give themselves little or no concern about their offspring. The consequence is that only a very small proportion of the children brought into the world reach maturity. The mortality of children under five years of age is, no doubt, considerable in all countries; but in Russia it attains its acme. Many more than one-half of the infants die in the earliest days of existence. One-eighth die between the ages of five and ten, and another eighth between ten and twenty. Thus three-fourths perish before reaching mature age. Now, where are we to look for the cause of this extreme mortality? It cannot be referred to climate alone; for throughout the whole extent of Russia there is no climate more inimical to health than that of St. Petersburg, and yet in the capital the deaths during infancy are not, as in other parts of the empire, in the proportion of one-half, but only of one-third, to the births. The reason of this favorable result is, that children are more cared for, and their physical development is better attended to, than they are in the provincial governments. Again, a vast portion of infantile premature death in the latter is due to the carelessness of the mothers, who, it is said, continually expose their offspring to fatal accidents.

Amongst ourselves, Manchester appears to stand in an unenviable prominence as a slaughter-house for children. It is calculated that in that city one-half of the children die before they reach the age of five years, whilst in healthy country districts the mortality of early life is much less. According to Dr. Barker, of 1,000 born in agricultural districts, 221 will die under five years of age, showing a mortality less by half than that of Manchester. One-fourth of all the children born in England die before they reach their fifth birthday. The "slaughter of the innocents" has become a modern realization as well as an historic record.

EDITORIAL AND MISCELLANEOUS.

Who Discovered Anæsthesia?

NINETEEN years ago this summer, Dr. L. P. BROCKETT, a physician now, but then a student in Hartford, Connecticut, having recently had a molar tooth extracted which gave him great pain, was talking with the dentist on various subjects, when the conversation turned on the intoxicating influences of nitrous oxide gas. The dentist remarked, "*that he believed that a man might be made so drunk by this gas, or some similar agent, that dental or other operations might be performed upon him without any sensation of pain on the part of the patient.*" This conversation occurred in August 1840, and the man who uttered the startling and entirely novel proposition, was HORACE WELLS.

Four years passed by, and in the same city a traveling lecturer (Colton by name) administered to several persons the "laughing gas," amongst others, to a certain dentist. One of the party, while under its influence, received a severe hurt, but did not give any evidences of pain, when the dentist remarked to his neighbor (Mr. David Clarke), that he believed "*that a man, by taking that gas, could have a tooth extracted or a limb amputated, and not feel the pain.*" This was on the 10th of September 1844; and the great idea was again distinctly stated by the same HORACE WELLS.

On the morning of the 11th of September (the day after his lecture), Mr. Colton was requested by a gentleman to go with him to a dentist of Hartford, Dr. J. M. Riggs, and carry some "nitrous oxide." This person sat down in the operating chair, took the bag of gas, and inhaled it until he became insensible, and Dr. Riggs extracted one of his largest teeth. On coming to his senses, he cried out "*it did not hurt me more than the prick of a pin; it is the greatest discovery ever made.*"

On that day the great idea became an embodied fact, and the discoverer proved in his own person the truth of his theory, for the man was HORACE WELLS.

From that time his restless, excitable spirit knew no peace. Day and night he talked of it, experimented with it, and studied its effects and modes of preparation. In a few months the truth was verified by many successful experiments. Doctors and professors, bishops, members of congress and many citizens of Hartford and the vicinity united with one accord to declare, from personal experience, their perfect faith in the new discovery. Not only in tooth drawing, but in large surgical operations was the experiment tested. The thigh was amputated, tumors removed, cancers dissected out of the human body without pain; and for *twenty-two months* no other man opened his mouth, made an experiment or published a fact with regard to the great discovery about to bestow its priceless blessing on suffering humanity, save the one to whom we owe it—HORACE WELLS.

This ardent, zealous seeker after truth, often injudicious and extravagant, but ever frank and guileless, had a quondam student (now friend), who lived in Boston. His name was W. T. G. Morton. To him he applies for assistance, so that his discovery may be brought before the notice of the great men of the metropolis. Morton gave him the opportunity of using the nitrous oxide in the presence of the medical class of Harvard university. The tooth was extracted, but the patient screamed; and although he afterwards declared that he did not feel the pain, the *students* *hissed* the trembling adventurer (the unknown dentist) from the hall—and back to his home, heart broken, friendless, but not despairing, came HORACE WELLS.

The tale is almost told. Morton sees *his* chance. Wells had proved that *sulphuric ether* has the wonderful power; and fearing to repeat an experiment which had just failed, *he* determines to try the ether. He seeks for an influential friend, and finds him in *Professor* Charles T. Jackson (God save the mark)! and on the 30th of September 1846, twenty-

two months *after* Dr. Wells proved the fact on himself, Morton pulled out a tooth for Eben Frost without pain. The professor now, however, steps in for his share. The Letheon is patented. The Boston surgeons use it in the hospital. Bigelow sends it to Liston, who telegraphs to Edinburgh—Glory! we have conquered pain. The stolen goods is contended for by the first rogue, who finds himself cheated out of the credit by the second, who is a professor, and has the cards over him. They fight over the glittering prize. Meanwhile, the *world* weeps with joy at the blessed boon, and a thousand thankful hearts throughout the civilized earth send up their grateful prayers to God for the unutterable blessing.

Where is the discoverer—he who thought it first—proved it first—he who ventured all—yea, his life, for the truth—where is HORACE WELLS?

Defrauded of his honors, betrayed by his friend, deserted by good fortune, his body shattered by the constant use of all sorts of excitants—still experimenting on himself—his mind ill regulated, impulsive, tortured by the cruel fate which seemed to await him; 'twas more than he could bear. Mankind looked here and there eagerly for their benefactor, and found him at last—in the suicide's grave.

We bring before you, reader, in a few words, this mournful story, because it is right that *we*, American physicians, who are proud to claim as *ours* this greatest gift to medical science, should not neglect to do honor to its real author. His wife lives yet to pray that this may be done. His son asks that his father's claim shall be closely scrutinized, and if proved, acknowledged and published to the world. It is substantiated by evidence* too strong to be overthrown—by facts deposed and sworn to by numerous witnesses above suspicion. Let us then individually examine for ourselves, and then unite with one accord to award tardy justice to the memory of HORACE WELLS.

* See Senator Smith's statement of the question, as laid before the committee of congress, a copy of which, owing to the kindness of a friend, we have before us.

VARIETIES.

Medical News and Items.

HEREDITARY INFLUENCES IN THE PRODUCTION OF INSANITY.—Hereditary influences, striking as these often are, really exist in but a very small proportion of all the cases of insanity; and even where they do, the individual who is strictly mindful of natural laws, avoids excesses of all kinds, and is happy in his domestic and social relations, may be really much better off than those who lead a different kind of life, and yet have never known an ancestor to suffer from such an affliction.—*Dr. Kirkbride's Hospital Report.*

THE LENICEPS.—M. Mattei presented very lately to the Academy of medicine of Paris, an instrument for the extraction of the child, which differs from the ordinary forceps by being very short, and by the branches locking upon a transverse wooden handle. The inventor considers that his instrument does not frighten the mother, as it may be used without her knowledge, and that it acts very gently upon the child. He therefore proposes to call it *leniceps* (*leniter capiens*), in contradistinction to forceps (*fortiter capiens*).—*London Lancet.*

DEATHS CAUSED BY BURNING FLUID.—In most of the following instances of loss of life and property, the "accident" no doubt resulted from the criminal carelessness of filling the lamp with fluid while it was burning: and yet people will not take warning!

Mr. E. Meriam of Brooklyn states that he has kept a record of deaths, injuries and conflagrations resulting from the use of camphene and other burning fluids used for the purpose of illumination, since July 22, 1850. Since that date he has recorded the deaths of three hundred and seventy persons, and the injuries of four hundred and seventy-seven persons, many of the latter of whom the accounts stated were not expected to survive the injuries they received. The losses by fire from these fluids he estimated at upwards of one million of dollars. Mr. Meriam says that when the weather becomes hot in summer, the danger in the use of burning fluids will increase. In the short term of thirty-six days within the present year he had recorded the death of nine persons by camphene and burning fluid.—*Phil. Med. Rec.*

ON THE MANNER OF STOPPING THE PULSATIONS OF THE RADIAL ARTERY AT WILL.—When the forearm is, either actively or passively, extended on the arm in an exaggerated degree, the pulsations of the radial artery cease. This fact every one can ascertain for himself; and M. Verneuil explains it by a compression of the aponeurotic expansions of the biceps and brachialis anticus upon the vessel. Advantage might be taken of these circumstances in hemorrhage from the hand or wrist; in the ligature of the radial or ulna arteries and their branches; or, lastly, in aneurism of the forearm. A weight might, in such cases, be fixed to the hand; or a splint be fixed on the dorsal aspect of the limb, with a pad against the elbow, so as to enforce exaggerated extension.

La Presse Médicale Belge.

VIRGINIA MEDICAL JOURNAL.

OCTOBER 1859.

ART. I.—*Ruptura Uteri*. By V. W. HARRISON, M. D., Petersburg, Va.

THE comparative infrequency of the occurrence of this affection has induced me to give a detailed history of the present case, which occurred under my immediate observation. The subject of it was a servant in my own family. Her occupation was that of cook and washer. She was a strong, healthy, corpulent person, and the mother of several children. Her labors were remarkable for no peculiarity, save being tedious, with comparative absence of pain—her *pains* (*dolores ad partum*) being infrequent and of little force. The pelvis was well formed, and to appearance she presented no obstacle to the successful termination of her accouchement.

Wednesday Sept. 14th.—Labor pains commenced about midnight, and I was duly notified of the fact. A midwife was summoned, and no fears were apprehended respecting the issue. Upon enquiry in the morning, I was informed that labor was progressing slowly, and that every thing seemed right. About 7 o'clock A. M. I visited the case. The midwife informed me that she had ruptured the membranes, and that the pains were rather feeble, yet she complained of no uneasiness. After waiting a short time, I made

the examination of *touch* (thinking that the case was progressing rather slowly after the rupture of the membranes), to satisfy myself that the presentation was favorable and the parts dilatable. Being satisfied in regard to the matter, after awaiting a while to observe the patient's movements, I left her for a short time. The pains were not frequent, and seemed more characteristic of the *grinding* than the expelling pains. The abdomen was unusually prominent. However, as she did not seem to suffer more than usual, and her labors being usually slow, I deemed it unnecessary to resort to the administration of any parturifacient, and concluded to leave the case to the powers of nature. Occasionally, the pains would come on feebly, and pass off without producing any progress in expulsion. She vomited several times; but as such a symptom is not rare in labors, I regarded it not as ominous of the impending danger. Before 11 o'clock there seemed to be an entire cessation of uterine action. The surface was warm and pleasant, and her pulse natural. Having an engagement to fill, I left the case, hoping, before my return, there would be a renewal of action and probable birth of the child. In this I was sadly disappointed.

I saw the case again at 3 o'clock. She did not appear to be suffering, yet there was a frequency of pulse, and a cool, clammy state of the skin, indicative of great nervous exhaustion. The first impression made upon my mind upon this view of the case, was, that I had postponed action too long, and perhaps I had jeopardized the life of the woman. Pulv. ergotæ, grs. 20, was soon administered; and as it failed to excite uterine action, I called upon Dr. T. Withers, and requested him to see the case with me. About 4 o'clock he saw the case, and after an examination, we concluded to continue the ergot. We administered the vinum ergotæ at intervals till she had taken nearly an ounce, yet without producing any decided effect upon the uterus. The organ seemed perfectly insensible to its action. The case was involved in obscurity, yet metrorrhæxis was suspected, with its

direful issue. Instrumental delivery offered the only hope in the case. Whenever a slight pain would come on, the power seemed misapplied—instead of the head of the child advancing toward the natural outlet, there seemed to be a peculiar prominence of the fundus uteri anteriorly, yet without any perceptible recedence of the head. The body of the child seemed to be thrown out of the proper axis whenever there was uterine contraction. The knees could be distinctly felt through the abdominal parietes. The presenting part had not yet descended sufficiently into the inferior strait to admit the proper adjustment of the forceps. Her condition was one of imminent peril. She was almost pulseless, though she had taken stimulants, and we believed her sinking from some obscure cause.

The time had arrived for mechanical interference. About 9 o'clock P. M. Drs. White, Withers and Strachan were present for the purpose of effecting her delivery. Several ineffectual efforts were made to adjust the forceps, but owing to the want of rotation and descent of the head, all manipulations proved futile. Being satisfied of the death of the child, embryulcia was adopted as the last resort. This was effected after she had been in labor twenty-four hours. As soon as delivery was accomplished, the hand was introduced into the uterus, as there was considerable hemorrhage, and the intestines could be distinctly felt in its cavity. These were pushed out as far as practicable, and by kneading the uterus, and with applications of cold water, the womb contracted and the hemorrhage ceased. The bandage and compresses were soon applied, and the patient placed immediately under the influence of opium—one hundred drops of tinc. opii being given in about four hours.

Friday 16th.—The patient, contrary to our expectations, survived, and expressed herself comfortable. Reaction had been established. Her pulse was almost natural, and her expression of countenance was good. The abdomen was somewhat tympanitic. Deeming it absolutely essential to keep up the anodyne influence, one grain of morphiæ sul-

phas was given during the day, in three equal doses, at intervals of six hours. She suffered no paralysis of the bladder, but passed her urine copiously by the natural effort. At night, meteorism had increased; her pulse had become accelerated, and she was more restless. Gave \mathcal{R} Hydrarg. chlorid. nit. grs. xx, pulv. opii, grs. iij, divided into three pills—one every four hours during the night.

Saturday 17th.—This morning she appears more comfortable than on last evening. Her pulse is less frequent, and her countenance depicts nothing of anxiety or suffering. Two grains of hydrarg. chlorid. nit. and one grain of opium were given at an early hour, and warm emollient applications were kept applied to the abdomen during the day. As there was evident exacerbation this afternoon, and her bowels had not been moved, an enema of ol. terebinthinæ was given, and followed in an hour by a large enema of ol. ricini and gruel, neither of which brought away any fæcal discharge. She was kept under the influence of opium during the night, by giving her one grain every three hours, yet without producing narcotism. She complained of very little pain during the time, though laboring under an extensive lesion, which may be attributable to the influence of the anodynes.

Sunday 18th.—Our patient is decidedly worse to-day. Her pulse is frequent, yet scarcely perceptible, though she has taken stimulants freely. Her skin is in a cool, perspirable state, and she utters incoherent expressions. Her abdomen is enormously distended, so much so as to interfere with respiration. She continued to grow worse, and expired at half past 11 o'clock, about sixty hours after delivery.

Autopsy.—Four hours after death, we proceeded to make an examination of the body, so as to afford ocular demonstration of the existing lesion. Upon cutting into the abdominal cavity, we found (as might have been expected) considerable effusion of bloody serum—perhaps a quart or more. The intestines were greatly distended with flatus.

The uterus remained in situ, though contracted, yet injected and somewhat larger than the normal size. The ligaments were partially severed by the scalpel, and the uterus pulled out to such an extent only as to exhibit the lesion. The rupture was of considerable magnitude, extending from the cervix uteri on the left, diagonally into the fundus. Perfect solution of continuity existed in the organ, the hand being readily admitted through the lesion into the cavity of the uterus.

Remarks.—The diagnosis in the present case was founded upon the prostration of strength, the sinking pulse, hurried respiration, vomiting, and the cold, perspirable state of the cutaneous surface, the peculiar prominence of the abdomen, and the readiness with which the knees of the child could be felt through the abdominal parietes.

The autopsy having confirmed the diagnosis, the question very naturally arises to the enquiring mind, at what period during labor did the metrorrhæxis occur? The labor pains, as before stated, were never violent. On the contrary, they were rather passive—still, sufficient action was exercised to produce a fatal rupture. Perhaps the membranes were ruptured at too early a stage of labor, before there was sufficient descent of the head, which may have required a larger amount of uterine force than was actually manifested to the attendants. There was unusual development and peculiar prominence of the abdomen before labor, and the uterus may have been distended to its utmost capacity, so that, very little force may have been required to have produced the casualty.

There may have been some defective alteration of the tissue of the organ, which may have predisposed the uterus to laceration. Other causes might be assigned, but all would be conjectural. The true cause is wholly undefinable.

ART. II.—*Report of two Cases of Diphtheria—With Remarks.*

By G. WELDON CLAIBORNE, M. D. of Petersburg, Va.

CASE I.—This morning, August 4th, was called to see Walter T., aged eight years, who, as his parents supposed, was suffering from ordinary sore throat, and hence had somewhat neglected him. Upon first examination, his condition very much indicated scarlet fever, as considerable rash was making its appearance on the neck, breast, &c., attended with flushed face, hot, dry skin, and great muscular weakness. The region of the throat about the parotid gland, on each side, was much swollen, red and tender, whilst upon examination internally with the depressor linguæ, I found a curious deposit of grayish yellow membrane covering each tonsil. There was considerable dyspnœa; pulse 120, though sufficiently strong to admit of leeches to the neck, about the region of the parotid glands. Commenced the treatment, by applying four or five American leeches to each side of the throat, just behind the angle of the inferior maxillary, at the same time giving hydrg. mit. chlo. grs. ij, pulv. ipecac, grs. j. M. every two hours until six of the former and three of the latter had been taken.

August 5th.—Called this morning, and found the patient somewhat better; medicine has operated; pulse has been reduced to 95, and the surface feels more natural, having lost its heat and dryness; yellowish discharge from the nose, which excoriates the upper lip, and the patient complains of fullness across the nose, from eye to eye, showing that the inflammation which but yesterday was affecting the mouth, pharynx, &c., has now commenced to pass upwards, through the posterior nares. From present appearances, I deem it necessary to commence with gargles, washes, &c. Ordered a gargle of mel. boracis, 3ij; potassæ chloratis, 3j; aqua fortis, 3iv. M. Gave hydrg. mit. chlo. grs. iv; sulphas quiniæ, grs. vj.

5th, P. M.—Saw him this evening, and found that the

medicine had acted; that the tongue was clean, the pulse quite natural, and the fever nearly diminished. The patient had, however, refused to use the gargle, and hence I resorted to the probang, saturated with my wash. This failing to bring away the false membrane, I ordered another wash of the following composition: *Acidi nitrici*, 3iss; *potassæ chloratis* 3j; *aqua font.* 3iv. M. and applied the probang, well saturated with it. This cleaned away the membrane from the tonsils quite well, and left them slightly bleeding. Ordered his parents to apply the wash again at bedtime, and left him for the night.

6th.—This morning the patient is breathing quite hard, and entirely through the mouth, as the nostrils are now closed. With the probang well saturated, I washed out his throat, and with a syringe injected a portion of the same wash into the nostrils. This rendered breathing much easier. Ordered the following: *Quinæ sulphas*, grs. xvj; *acidi sulph. aromatici*, gtts. xx; *misturæ amygdalæ*, 3iv. M. Dose, tablespoonful every two hours. Allowed whatever nourishment he might wish. Ordered soups, &c. hot.

6th, P. M.—Patient better this afternoon, and has taken some nourishment. Washed out his throat; gave tablespoonful of the mixture, and allowed cocoa, which he requests.

7th, A. M.—Patient still better, though far from being out of danger. Continued the wash; gave nourishment as often as possible, and with it brandy and quinine.

7th, P. M.—Breathing less hurried, and much easier; pulse very weak. Applied the wash; ordered nourishment and the brandy with quinine.

8th, A. M.—Patient still very weak, and refusing to take nourishment of any kind. Ordered spts. *terebinthinæ*, gtts. xl; *ovum vitelli* No. j; *misturæ amygdalæ*, 3ij. M. Dose, tablespoonful every hour.

8th, P. M.—Patient is no better. Continued the same treatment.

9th.—This morning I found him worse; weakness in-

creasing from want of nourishment; considerable dyspnœa; pulse quick and weak. Ordered same wash, with nutritious enemas, and forced some of the mixture ordered on yesterday. This afternoon saw him, and continued same treatment.

10th, A. M.—Found him with cold, clammy perspiration over the whole body, and evidently sinking. I remained by him, but was compelled to surrender. He died of dyspnœa and asthenia.

CASE II.—Laura T., aged 12 years, sister of the little boy whose case I have just reported, was attacked on Aug. 9th, P. M. with the same disease. Symptoms nearly identical, except that in her case the swelling was much greater on the right than on the left side of the throat; tenderness and redness of course corresponding; great heat of the skin; anxious expression of the countenance, with quick and weak pulse. Commenced treatment, by giving hydrg. mit. chlo. grs. v; pulv. ipecac, grs. iij—and ordered a gargle of vinegar, salt and water, which was to be used pretty freely until I could see her on the following morning.

10th, A. M.—Found patient better, as the heat had somewhat diminished, and the pulse was about 90, having nearly become natural. Ordered a wash different from the one used in the case of the little boy. R. Argenti nitratis, lxxx; aqua font., ℥iv. M. Apply probang well saturated, ter quotidie. Found that this wash acted finely in removing large pieces of that grayish yellow membrane which is so characteristic of the disease. Continued the wash during the day, and ordered acidi sulp. aromatici gtts. xx; quiniæ sulphatis, grs. xvi; misturæ amygdalæ, ℥iv. M. Dose tablespoonful every three hours.

10th, P. M.—Saw my patient again; found her very weak and much excited from the death of her little brother; remained with her some time, and endeavored to quiet her. Continued the mixture; ordered nourishment, and left for the night.

11th.—This morning I found her somewhat more composed; was informed that she slept quite well during the night, but breathed very hard. Examination disclosed considerable false membrane covering each tonsil. Ordered another wash of a more mild character, viz: Boracis, 3iv ; mell. 3i ; tinc. myrrhæ, 3i : aqua font., 3ij . M. Apply the probang well saturated, some four or five times a day. Ordered murias tinc. ferri, 3iv , and potassæ chloratis, 3ij , with aqua font., 3iv . M. Give tablespoonful of the latter with ten drops of the former, ter quotidie.

11th, P. M.—Saw my patient again, and found her throat extensively swollen, and very red, having an erysipelatous appearance. Washed out her throat, gave nourishment, and ordered ale as a stimulant.

12th, A. M.—Saw my patient again in company with my brother, Dr. J. H. Claiborne, and found the disease increasing in force. The swelling was now very great, and was extending downwards beneath each clavicle, over the region of the bronchæ; breathing very difficult, and frequent vomiting of a yellowish, offensive matter; pulse very weak and slow. Ordered strong brandy toddy every two hours, alternating, however, with the following mixture: \mathcal{R} Quiniæ sulp. grs. xxiv; acidi sulp. aromatici, gtts. xl; lemon syrup, 3iss ; aqua font., 3iiss . M.

12th, P. M.—Called, and found her moribund, mortification ensuing, and the pulse so weak that it could scarcely be detected at all.

Remarks.—I have selected the above as two of the best marked of some eight or ten cases of diphtheria which have occurred in my practice during the few last months. They were the only two cases which terminated fatally. A similar treatment pursued in the remaining, proved successful. These cases occurred in the family of one person, happening in one week, and were characterized by that especial malignity which certain diseases occasionally manifest towards some families. I believe it clearly apparent from these, that

the tonic treatment, preceded by a few doses of mercury where a foul tongue and offensive breath indicate disordered secretions of the primæ viæ, is that which promises the best success; and of the tonics, quinine, in doses adapted to the age and condition of the patient, with a mineral acid and a little lemon syrup, the most desirable. Brandy, or some one of the tinctures, in the latter stages may be quite necessary. Chlorate of potass. and muriate tincture of iron were used in most of the cases, alone and combined, and with, I think, some good effect.

As to the local treatment—in the beginning of the disease, I believe no local application could properly supersede nitrate of silver in solution, ten to thirty grs. to the oz. After a few days, however, when the fauces had become so exceedingly sensitive as to give great pain, I used with equal success a wash of borax, honey and myrrh.

ART. III.—*Depressed Fracture of the Frontal Bone.* Treated at the Infirmary of the Medical College of Virginia. By Professor GIBSON.

MIKE, mulatto, æt. 22; abode, Mecklenburg county, Virginia; employment, field hand; previous health and habits good; admitted March 22d, 1859.

History.—Five years ago this man received a kick from a colt on the right frontal protuberance of the os frontis, which caused a depressed fracture. For some time he labored under partial paralysis of the voluntary muscles; but finally recovering their use in a measure, he can only walk at the risk of tumbling down, for he staggers like a drunken man.

Report.—The boy complains of “swimming in the head;” says whenever he attempts to work in the sun he has a fit, which evidently proceeds from depressed bone encroaching on the brain. The fracture has long since united, but there is much depression. R̄ Ol. ricini, ʒi.

Operation.—March 26th.—Dr. Charles Bell Gibson operated on Mike to-day. A crucial incision was made over the site of depression down to the bone; the trephine was then applied, and soon the offending mass was removed. The dura mater was found in good condition. The flaps having been brought together by means of adhesive straps, and cold water dressing applied to the wound, the patient was put to bed. He had not an unfavorable symptom up to the time of his discharge, and was doing well when last heard from. The wound healed completely by the 10th of April, and by the 25th April he had improved so much in his gait, manner and conversation, that he was discharged.

I have recently heard from Mike, and am pleased to learn that he now walks without staggering, and can do almost as much work as any boy on his master's farm.

ART. IV.—*Case of Osteo Sarcoma of the Inferior Maxilla.*

Treated at the Infirmary of the Medical College of Virginia. By Professor PETICOLAS.

MARIA, black, æt. 60; abode, King William county, Virginia; employment, cook; previous health and habits very good; admitted June 18th, 1859.

History.—Several years ago had "toothache" on the left side for some time, but finally had the tooth (second molar of lower jaw) extracted. Very soon a tumor was observed originating in the site of the offending organ. It continued to increase in size until it was evident that the patient had either to submit to an operation or perish.

Report.—The patient, when admitted, presented a hideous appearance. The immense mass of bone and flesh, occupying nearly the whole cavity of the mouth, and distending the left side of the face, must have excited the pity and sympathies of all who saw her. The bone from its angle to the symphysis mentis, was involved; and the upper teeth of the

upper jaw had created a trough in the superior border of the tumor; complains of sharp pains in the diseased part; general condition pretty good; takes food with great difficulty.

Operation.—June 20th.—The middle and lateral incisors, also the canine and bicuspid teeth on the right side of the lower jaw having been extracted, the patient was put under the influence of chloroform, which was borne very well. All things being ready, the operator proceeded, by passing the knife through the lower lip about a quarter of an inch below its margin, and half an inch to the right of the median line. This incision was continued to the left, along the inferior border of the bone, as high as half an inch above its angle. The two flaps were then dissected up, severing the facial artery, which was secured by ligature without difficulty. All necessary dissection accomplished, Hays' saw was applied to the bone about a quarter of an inch to the right of the crista mentalis. After sawing nearly through, a pair of bone pliers effected a division of the bone. The chain saw was then applied a quarter of an inch above the angle; and very soon the tumor was removed. Hemorrhage was very slight. The flaps being brought together by interrupted suture, the cheek was supported by a wet compress of lint confined by means of bandage.

21st.—Doing very well. Removed dressings and applied adhesive straps of isinglass plaster, and continued compress. The treatment afterwards consisted in a tonic regimen, and injections of cold water, dilute chlorinated soda, and solutions of zinci sulphas, grs. v. to aq. puræ ʒi. Nitrate of silver was occasionally used, when the granulations demanded it. Under this treatment the patient improved very fast, and was discharged cured on the 30th day of July.

TRANSLATIONS AND SELECTIONS.

- I. *On the Rapidity and Extent of the Physical and Chemical Changes in the Interior of the Body.* By JOHN C. DALTON, JR. M. D., Professor of Physiology and Microscopic Anatomy in the College of Physicians and Surgeons of New York. Read before the New York Academy of Medicine, March 16, 1859.

Of all the departments of physiology, there are none which have made greater progress of late years than that which relates to the accurate investigation of the physical and chemical phenomena of the living organism. There is, also, no department of the science, which has a more direct and important bearing upon practical medicine. The study of these phenomena, like that of most others in which the physician is interested, has been obliged to pass through a certain period of infancy and progressive development. It required a very considerable time, and no little expenditure of ill-directed and apparently fruitless investigation, before physiologists came to understand the proper methods even of extracting and examining the substances which constitute the animal frame. The true mode of investigation having been finally ascertained, and the way fairly opened for profitable study in this direction, a long series of labors followed, which yielded the most valuable results, and which have now made us tolerably well acquainted with all the more important proximate principles to be found in the interior of the frame, the substances taken with the food and in respiration, and the excrementitious matters discharged from the body.

A similar difficulty and delay were experienced, also, in the early study of the physiological relations of these different materials, and their mutual reaction in the vital processes. Numerous as they are; and of widely different nature and properties, and mingled together in varying proportions in the animal tissues and fluids, the phenomena which they presented were of a novel and complicated character, and could not, at first, be readily appreciated. The usual methods of examination and experiment, which had been habitually employed by chemists in the study of isolated inorganic

substances, failed of accomplishing their purpose when applied to this new order of phenomena. These methods, therefore, led only to imperfect or contradictory results. The insufficiency of the means first used being at last made manifest, it was by a very gradual process that other and more appropriate methods were substituted for them.

Such a change, however, was absolutely necessary before any completely satisfactory progress could be made; and, singular as it may seem, it is comparatively within a recent period that we have come to a full understanding of the direction in which this kind of physiological investigation should be pursued. The study of the vital phenomena, in fact, can be profitably followed only by the direct examination of these phenomena, *as they actually take place in the living body*. This is the only field in which physiological questions can be positively decided, and in which the labors of the experimenter can be made actually serviceable to the progress of medicine. For, however much assistance we may derive from comparative experiment and scientific analogies, the results obtained from these sources can only be of service by suggesting probabilities, and as preparatory to the final investigation. The actual phenomena presented in the living body often turn out, in fact, to be quite different from any which could have been previously anticipated.

Whenever a wider field is thus opened to the laborers in any department of natural science, and more efficient methods of investigation brought into use, the subject is often so much modified as to present itself under an entirely new aspect, and becomes gradually extended by the development of those portions which were previously incomplete. While this process is going on, the new order of facts, and the new ideas which originate from them, remain, for a while, partially concealed among the numerous isolated discoveries which have made their appearance from time to time. During this period, therefore, they do not exist as connected statements, in the works of any writer, but are only to be found scattered here and there, exerting an important influence on the immediate progress of the science, but not yet fully recognized as forming a part of its acknowledged doctrines.

Something of this kind is now taking place in the department of physiology to which I have alluded. After becoming acquainted with the nature and properties of the proximate principles, or ingredients, of the body, and learning the true method of investigating their changes and reactions, it soon became evident that the mutual dependence

and physiological relations of these materials could not be fully understood without knowing something about their absolute and relative *quantities*. The methods of investigation already coming into general use enabled experimenters to overcome, in a great measure, the obstacles presented by this new and difficult portion of the subject; and the success of these labors, so far as they have yet been pursued, promises results hardly inferior to those which have been derived from the accurate quantitative analysis of the inorganic chemists.

I have accordingly thought that the duty which has been assigned to me for this evening, by the council of the academy, could not be better discharged than by asking your attention, as the subject for our present consideration, to the *rapidity and extent of the physical and chemical changes in the interior of the body*.

I would remark, in the outset, that both the quantity of the animal fluids, and the rapidity of the changes which they undergo, are found, upon direct investigation, to be very much greater than we should have anticipated. We have known, for a long time, that the animal body is the seat of incessant absorption and exhalation, decomposition and metamorphosis, and that these phenomena are characteristic of living beings, necessary as the conditions of their existence, and directly dependent on their structure and organization; but the real extent of these changes, the actual amount of the substances absorbed and discharged, produced and destroyed, in the body, when measured by experiment, far surpasses our previous expectation, and gives us a new and much larger comprehension of the true nature of the vital operations.

Quantitative experiments of this kind are most readily made upon the external operations of supply and waste, or those of nutrition and excretion, performed by the body as a whole. The air we breathe, the food and water taken into the alimentary canal, together with the fluids and solids discharged with the urine, fæces and perspiration, and the gaseous exhalations of the breath—these form the two compensating quantities of ingesta and egesta, which when properly balanced, maintain the entire organism in a healthy condition.

The process of *respiration*, being the most incessant and uniform of those just mentioned, requires to be examined first.

The history of experiment on this subject would illustrate in a very forcible manner the obstacles to be encoun-

tered in nearly all quantitative investigations of the animal functions. For mechanical difficulties present themselves in the way of such experiments, both more numerous and more troublesome than would be supposed, even in so apparently simple a matter as that of measuring accurately the different gases absorbed and exhaled with the breath. I will leave out of the question, however, the explanation of these difficulties, and of the manner in which they have been overcome, and pass at once to a brief statement of the results which have been finally obtained.

An adult man, of average size and development, takes into the lungs with each ordinary inspiration, twenty cubic inches of atmospheric air. Since he breathes usually 18 times a minute, this makes 360 cubic inches of air inspired per minute, 21,600 cubic inches per hour, and 518,400 cubic inches per day. As the respiration is increased, however, in rapidity and intensity, with every muscular exertion, the actual daily quantity of air used in respiration is not less than 600,000 cubic inches, or 350 cubic feet. I give these quantities in round numbers, since these are more easily understood, and since the physiological variations in respiration are such that an absolutely precise estimate would be both unnecessary and inapplicable; 350 cubic feet, therefore, represents the quantity of atmospheric air daily used in respiration. During this process the air loses, upon the average, 5 per cent. of its volume of oxygen. The total quantity of oxygen, therefore, actually absorbed by an adult man, during twenty-four hours, is seventeen and a half cubic feet, or about four times the bulk of his own body.*

The quantity of carbonic acid exhaled is but little less than this. The expired air usually contains about four per cent. of its volume of carbonic acid. According to the researches of Vierordt, and Andral and Gavarret, the average quantity of this gas exhaled is very nearly 1,150 cubic inches per hour, or fifteen and a half cubic feet per day.† The volume of carbonic acid exhaled with the breath, is necessarily somewhat less than that of the oxygen absorbed, since a certain portion of oxygen is finally disposed of in the body in the formation of other excretory substances, and accordingly does not reappear under the form of carbonic acid. The proportion of surplus oxygen thus employed varies somewhat in different animals, and with the use of different kinds of food; but the above numbers represent

* This equals, in weight, 7,134 grains, or a little over one pound.

† This is, by weight, 10,740 grains, or a little over one pound and a half.

the quantities of the two substances in the human species, under ordinary conditions and regimen.

In some instances the intensity of respiration is considerably greater than this; and particularly in small animals, endowed with well marked nervous excitability. Regnault and Reiset found that the consumption of oxygen, for a given time, in proportion to the whole mass of the body, was more abundant in small animals and in birds, than in the human subject; and that in sparrows and greenfinches, it was from eight to ten times greater than in fowls and ducks.

The entire quantity of *food and drink* consumed in twenty-four hours may be ascertained, without much difficulty, by confining the diet to a few simple and nutritious articles. For a healthy and vigorous man, taking free exercise in the open air, the average amount of food required per day, is as follows :

Meat,	-	-	16 ounces or 1.00 lb. avoirdupois.
Bread,	-	-	19 " 1.19 " "
Butter or fat,	-	-	3½ " 0.22 " "
Water,	-	-	52 fluid oz. or 3.38 " "

Beside the fluids taken as drink, however, the meat and vegetable substances, used as food, themselves contain a very considerable proportion of water, which may be determined by analysis. By uniting these two estimates, the total quantity of water absorbed daily, is increased to a little over four pounds and a quarter; while the various solid ingredients of the food may be ascertained separately, by a similar process.

A corresponding quantity of material is discharged daily, by the excretions and exhalations. A little over two pounds of water passes off with the urine. Lavoisier and Seguin found that nearly as much is discharged daily with the perspiration; and a certain amount is also exhaled, under the form of aqueous vapor, with the breath. It has been found difficult to measure exactly this last quantity, but it appears, from the most reliable data which we possess, that the watery vapor exhaled from the lungs, is at least one-fifth as abundant as that discharged from the skin.

If we now bring into the calculation, the quantities of urea and saline substances discharged with the urine, and the insoluble matters of the intestinal secretions, all easily ascertained by experiment, we find that the total amount of ingesta and egesta, for twenty-four hours, is that expressed in the following table :

<i>Absorbed during twenty-four hours.</i>			<i>Discharged during twenty-four hours.</i>		
Oxygen,	-	1.019 lbs.	Carbonic acid,	-	1.535 lbs.
Water,	-	4.275 "	Aqueous vapor,	-	0.445 "
Albuminous matter,	-	.340 "	Perspiration,	-	1.965 "
Starch,	-	.590 "	Water of the urine,	-	2.020 "
Fat,	-	.220 "	Urea and salts,	-	.150 "
Salts,	-	.056 "	Fæces,	-	.385 "
		6.500 "			6.500 "

No less than six and a half pounds, therefore, are absorbed and discharged daily by the healthy adult human subject; and for a man having the average weight of 140 pounds, in twenty-two days a quantity of material thus passes through the system, equal to the weight of the entire body.

It must be remarked, also, that this is not a simple phenomenon of the passage, or filtration, of foreign substances through the animal frame. The materials which are absorbed actually combine with the tissues, and form a part of their substance; and it is only after undergoing subsequent decomposition, that they finally make their appearance in the excretions. None of the solid ingredients of the food are discharged under their own form in the urine, viz: as starch, fat or albumen; but are replaced by urea and other crystallizable substances, of a different nature. Even the carbonic acid exhaled by the breath, as experience has now taught us, is not produced by a direct oxidation of carbon; but originates by a steady process of decomposition, throughout the tissues of the body, somewhat similar to that by which it is generated in the decomposition of sugar by fermentation. These phenomena, therefore, indicate an actual renovation in the substance of which the body is composed.

The quantity of material used in this manner for the purposes of nutrition is, in some instances, much larger than the above. A vigorous dog, weighing thirty pounds, will readily consume in a single day two pounds of fresh meat, a quantity of solid food nearly four times greater, in proportion to the size of the body, than that used by man; and young birds have been known to consume daily as much as one-half, or even three-quarters, of their entire weight.

Such is the activity of the most palpable changes to which the body is subject, viz: the external phenomena of supply and waste. But between these two extremes there exists a series of internal changes, incessantly going on in the body, and constituting the processes of circulation, secretion, and nutrition. Investigation shows that the activity of these internal phenomena is much greater than that of the others just described.

The difficulties in the way of ascertaining the exact quantity of *blood* in the body, depends in great measure upon the rapidity of these internal changes. It is impossible to ascertain this quantity by merely opening the large arteries and veins of an animal, and collecting all the blood which escapes; for the body can never be completely drained of blood by this means, since some of it always remains behind in the blood vessels of the internal organs. Valentin and some others have, accordingly, endeavored to settle the question by drawing a certain quantity of blood from the veins, then injecting a similar amount of distilled water or saline solution of known strength, afterward performing a second venesection, and finally determining the difference in density between the first and second specimens of blood.

This plan might succeed if the blood vessels were a closed circuit of impermeable tubes, through which the blood moved without alteration or modification in the different organs. But this is not the case. The blood suffers constant changes, both in density and composition, in different parts of the circulation. The mere withdrawal of a certain portion of it from the veins causes an immediate alteration in the density of the remainder. As the vessels are partially drained by venesection, they are immediately filled up again, to a certain extent, by the imbibition of serous fluid from the neighboring tissues. Becquerel and Rodier found that this alteration of the blood was very well marked, in the human subject, even within the limits of a single moderate bleeding. It is a continuous and progressive alteration, "beginning," as they express it, "with the first drop which escapes, and ending only with the last." These observers found that in bleeding from the arm, to the extent only of twelve and a half ounces, the portions of blood drawn toward the end of the operation were already different in density from those which escaped at the beginning; the proportion of solid matters having fallen, in some instances, from 167 to 163 parts per thousand, and that of the fibrin from 2.42 to 2.17 per thousand.

All such methods, therefore, of determining the quantity of blood are necessarily uncertain. The best plan yet suggested is that employed by Lehmann and Weber. They collected all the blood which escaped from the vessels of two criminals, executed by decapitation. They then injected the arteries of the head and trunk with distilled water, and collected the bloody fluid which returned by the veins; and, by ascertaining the quantity of solid matter which this fluid held in solution, they calculated the quan-

tity of blood which had remained in the vessels of the internal organs. This amount, added to the former, gave the entire quantity of blood in the body.

This plan, even, is not altogether free from objection; since, when the vessels of the body are injected after death, the water not only transudes and infiltrates the neighboring parts, but it also absorbs various substances from the solid tissues, in proportions different from those in which they would have been taken up by the blood. Still, it is sufficiently accurate for ordinary purposes; and the result thus obtained is, that for a man of average size, the entire quantity of blood in the body is from seventeen to eighteen pounds.

But this blood is not stationary, but in motion. The rapidity of its circulation, as ascertained by experiment, forms one of the most remarkable phenomena of the living body; and its discovery, when first made, naturally excited the attention of the profession by its very singular and unexpected results. These results are well known, and only require to be mentioned here in a brief manner. Volkmann, Poesseville, Hering, and Blake injected into the jugular vein of the horse certain saline substances, easily recognizable by chemical tests, such as ferrocyanide of potassium and nitrate of baryta, and then examined the blood drawn from the jugular of the opposite side at intervals of five seconds afterward; detecting the injected substance by this means after it had passed downward to the heart, through the pulmonary capillaries, upward by the carotid arteries, and again downward by the vein. They thus found that it traversed the entire round of the circulation in from twenty to twenty-five seconds.

It was at first thought that this statement could not be the expression of the truth, and that some source of deception must have existed in the details of the experiment; but subsequent investigation failed to discover any other mode of accounting for the appearances observed; and it was finally conceded that the substance injected must have passed with the blood through the circulation, in that short period of time.

These experiments have the great advantage of having been performed without opening any of the great cavities of the body, or exposing the circulatory organs to the unnatural contact of the air. Even here, however, it is not possible to fix upon the exact period required by the blood for its complete passage through the circulation, but only to make an approximative calculation. For it was found

that certain other substances, injected at the same time, such as nitrate of potass, acetate of ammonia, or a little alcohol, hastened or retarded to a certain extent the appearance of the ferrocyanide in the opposite jugular. It is plain, therefore, that the rapidity of the circulation does not depend simply on the impulse of the arterial current, but is influenced also by the relations existing between the physical constitution of the blood and that of the walls of the capillaries and the neighboring tissues. This will become still more evident when we have examined some of the other conditions and phenomena belonging to the circulation. The above variations, however, in all the experiments performed, were confined within the limits of from eighteen to forty-five seconds.

Another question of somewhat similar nature, relates to the quantity of blood passing through the heart and principal vessels in a given time. To determine this point, we must first know the quantity of blood expelled from the left ventricle with each cardiac pulsation. This cannot be ascertained by simply taking the capacity of the ventricle, after death, by artificial injection. For, in the first place, such an artificial injection will distend the ventricle to a much greater degree than it is ever filled by the blood during the normal condition of the circulation; and secondly, it is not at all certain, as assumed by some writers, that the ventricle empties itself completely at each pulsation. It is my own impression, from watching the pulsations of the heart, exposed in the chest of the living animal, that its emptying is partial only, and that, like the arteries, it always contains a certain amount of blood, when contracted as well as in a state of dilatation.

The only direct mode of determining the question which now occupies us, is to divide suddenly the arch of the aorta by a transverse section, and to measure the quantity of blood discharged during the first few seconds afterward. The objection to this plan is, that the opening of the chest and exposure of the thoracic organs diminishes, very probably, the force of the heart's action, and lessens, accordingly, the quantity of blood expelled at each pulsation. The result thus obtained, however, in this case, will certainly not be exaggerated, but, if any thing, will fall below the truth.

I have exposed the heart, in this manner, in a dog weighing fourteen and a half pounds, after producing insensibility by the inoculation of woorara, and keeping up artificial respiration by means of a bellows inserted into the trachea. I find that in cutting across the aorta, just above its origin

from the left ventricle, 300 grains of blood escape from the divided orifice in fifteen seconds. This will give 1,200 grains per minute, 72,000 grains per hour, and 1,728,000 grains per day. In an animal of that size, therefore, the quantity of blood passing through the heart in twenty-four hours is at least 247 pounds, or about seventeen times the weight of the whole body. Applying this result to an adult man, weighing 140 pounds, we find that the quantity of blood passing daily through the heart is at least 2,380 pounds.

It is this remarkable activity of the circulation which accounts for the large quantity of the internal secretions, constantly produced and reabsorbed in various parts of the body. The saliva is one of the secretions which are produced in considerable abundance. The only difficulty in ascertaining its exact quantity lies in the varying activity of its production at different times. Under ordinary conditions the saliva is merely secreted in sufficient amount to keep the mucous surfaces of the mouth moist and pliable, and to preserve the fauces and pharynx in a fit state to assist in the functions of the voice and respiration. But any gentle irritation, and particularly the introduction and mastication of food, will at once increase it to four or five times its usual amount. As this extra quantity, however, is naturally swallowed with the food, it cannot be directly obtained and measured. I have found that the saliva may be collected from the mouth, without using any artificial stimulus, to the amount of 556 grains per hour. By weighing a small quantity of bread and meat, both before and after mastication, it appears that bread gains during this process fifty-five per cent. of its weight by the absorption of saliva; and that freshly-cooked meat gains, from the same cause, forty-eight per cent. of its weight. We have already seen that the daily allowance of these two substances for a man in full health, is nineteen ounces of bread and sixteen ounces of meat. The entire quantity of saliva required for mastication is therefore 8,932 grains. The quantity secreted in the intervals between meals, for twenty-two hours, at 556 grains per hour, is 12,232 grains; and the entire daily quantity of the secretion, thus ascertained, is 21,164 grains, or a trifle over three pounds avoirdupois.

The gastric juice is much more abundant. Like the saliva, it is secreted, during the intervals of digestion, in very small quantity; hardly sufficient, in some instances, to preserve the normal acid reaction of the gastric mucous membrane. It is immediately poured out, however, in great abundance on the introduction of food, and continues to be

secreted during the entire process of digestion. In the dog, I have found it to be produced with such rapidity, shortly after feeding, that from 2 to $2\frac{1}{2}$ fluid ounces could be collected, from a gastric fistula, in the course of 15 minutes. Bidder and Schmidt actually collected, from a dog weighing 34 pounds, in a total period of 12 hours, one pound and three quarters of gastric juice; and by applying the same calculation to a man of medium size, the authors estimate the total daily quantity in the human subject, as a little less than 14 pounds.

An approximation to this result may also be obtained in a little different manner, viz: by ascertaining the quantity of gastric juice necessary to digest all the albuminoid matters taken with the food. Such an experiment on the artificial digestion of a known weight of muscular flesh by a given quantity of gastric juice, shows that about 33 grains of meat are dissolved by each fluid ounce of gastric juice. One pound of meat, the daily quantity used by a man in good health will therefore require $13\frac{1}{4}$ pints of gastric juice; and as a certain amount of albuminoid matter exists also in the bread and other vegetable substances used as food, there is every reason to believe that Bidder and Schmidt's estimate, of 14 pounds per day, is certainly not above the quantity actually produced.

By similar experiments, the daily quantity of the bile and of pancreatic juice has been ascertained with close approximation to certainty. Bidder and Schmidt find that for every pound weight of the whole body, there is secreted in the cat 102 grains of bile, in the dog 140 grains, in the sheep 178, and in the rabbit 958 grains per day. This secretion is therefore more abundant in vegetable feeders than in the carnivorous animals; and, taking the lower standard as a basis for calculating the amount of bile in the human subject, we find that the total daily quantity is about 17,000 grains, or very nearly $2\frac{1}{2}$ pounds.

The quantity of pancreatic juice, so far as ascertained, appears to be considerably less than the foregoing. I have not been able to obtain from the larger of the two pancreatic ducts, in the dog, more than 5 or 6 fluid drachms during a period of several hours. Bidder and Schmidt collected from the same animal, on the average $14\frac{1}{2}$ grains per hour; from which they calculate the daily quantity in man as about 2,500 grains, or a little over one-third of a pound.

The intestinal juice, or the product of the follicles of Lieberkuhn, has never been estimated as to quantity, since the mechanical difficulties in the way of obtaining any ex-

perimental data with regard to it are such, that no contrivance has yet been able to overcome them. There is every probability, however, that its quantity is tolerably large, since it is secreted from the walls of a tubular canal 20 to 25 feet in length, and presenting an internal surface of at least 7 to 8 square feet, studded throughout with secreting follicles.

The entire quantities of the above secretions, so far as they have yet been examined, amount, therefore, to between 19 and 20 pounds per day. This large quantity of the secreted fluids has sometimes been regarded as incredible, because the exact nature of the process has been misconceived. These fluids are not drained away from the body, and their materials lost to the circulation, but they are all reabsorbed, after having been exuded into the cavity of the alimentary canal. They are all, in some sense, digestive fluids, whose function is, for the most part, to act upon and dissolve the food; and as soon as this is accomplished, they are again taken up by absorption, together with the products of digestion which they have dissolved. Their secretion and reabsorption, in fact, go on continuously and simultaneously; successive portions passing and repassing through the glandular apparatus and the intestinal mucous membranes. There is no drainage, therefore, exerted upon the system by this process; but only a kind of internal renovation and interchange of the animal fluids, simultaneous with and secondary to the circulation of blood in the blood vessels.

Let us now examine, for a moment, the nature and activity of the process by which this secretion and reabsorption take place. How is it that the animal fluids exude through the mucous membranes, and again penetrate their substance to re-enter the circulation?

The phenomena in question have long been known to us under the names of *endosmosis* and *exosmosis*; and yet their exact nature has not, I think, been always accurately described. When an animal membrane, sufficiently recent to retain its natural texture and constitution, is placed, as a diaphragm, between certain liquids occupying distinct cavities, the two liquids are found, after a time, to have mingled with each other, more or less freely, on the two sides of the membranous partition. There is usually a passage of one liquid toward the other in large quantity, known as *endosmosis*, and also a passage of the second liquid toward the first, in smaller quantity, known as *exosmosis*. Now, this is not merely an act of simple filtration through pores, nor a mere admixture and diffusion of the two liquids through each

other. Experience has shown that the conditions regulating endosmosis and exosmosis do not depend, as was formerly supposed, upon the difference in density of the two liquids, nor even upon their affinity for each other, but upon their affinity for the substance of the membrane between them. It is not the two liquids which act upon each other, but the membrane itself which acts upon the two liquids; and the liquids, in passing through the membrane, unite intimately with its substance, and form, for the time, an integral part of its texture.

We can understand, then, why a living animal membrane, so far from being an obstacle to the passage of a liquid in any particular direction, may, on the contrary, favor this passage, and even be the active agent by which it is accomplished. All the phenomena, accordingly, of exudation and absorption in the living body, are instances of the exercise of this property, and depend upon it as the principal condition of their accomplishment.

This process is in reality much more active than we should be led to anticipate from our experiments with endosmometers in the laboratory. M. Gosselin, president of the society of surgery, at Paris, reported to the French academy of medicine, in August 1855,* the following experiments on the rapidity of endosmosis in the tissues of the eyeball. He dropped upon the cornea of the left eye of a rabbit, a watery solution of iodide of potassium, ninety grains to the ounce. At the end of seven minutes from the commencement of the experiment, he extracted both eyeballs from the animal, and examined first the left and then the right eye in the following manner: The surfaces of the eyeballs were first washed with acidulated water, and the washings, tested with a solution of starch, presented no trace of the presence of iodine. None of the iodine, therefore, adhered to the external surface of the eyeball. The cornea was then detached, dried on both sides with a bit of linen, cut in pieces, bruised and macerated for a short time in a capsule with a little distilled water. This fluid, then tested by starch and nitric acid, showed a distinct blue coloration of iodide of starch. The crystalline, vitreous body, and iris of the same eye, examined in the same way, did not give so distinct a reaction. The opposite eye, subjected to similar tests, did not show the least trace of the presence of iodine.

In another experiment, the eye was extracted eleven minutes after the application of the solution of iodine to the

* *Gazette Hebdomadaire*, Sept. 7th and 28th, 1855.

conjunctiva. The cornea, aqueous humor, iris, sclerotic, crystalline and vitreous body, in this case, all showed very evident indications of the presence of iodine; while in the opposite eye no such indications were found in any part.

In these instances, the solution of iodide of potassium had passed, by endosmosis, into the substance of the cornea in seven minutes, and in eleven minutes had penetrated through it into all the textures of the eyeball. In other experiments, the cornea and aqueous humor both contained iodine in six minutes, four minutes, and three minutes after its external application; and in another still, the cornea alone presented faint but unmistakable indications of its presence at the end of a minute and a half.

In the above experiments, it is plain that the iodine actually passed into the deeper portions of the eyeball by imbibition and endosmosis, and was not transported from the conjunctiva by the vessels of the general circulation; since the tissues of the opposite eye, examined at the same time, showed no trace of its presence.

It is in this way that a solution of belladonna or of atropine, dropped upon the conjunctiva, penetrates the cornea, is taken up by the aqueous humor, and acts directly and locally upon the muscular fibres of the iris, without affecting the system at large, or producing any alteration in the eye of the opposite side. M. Gosselin applied a solution of sulphate of atropine to both eyes of two rabbits. In half an hour the pupils were dilated. Three quarters of an hour later, the aqueous humor was collected by puncturing the cornea with a trocar; and this aqueous humor, dropped into the left eye of a cat, produced, in half an hour, dilatation and immobility of the pupil confined to that side. These and other similar trials showed beyond the possibility of doubt, that the aqueous humor of the affected eye actually contains atropine, while this substance is not present in the eye of the opposite side.

But these experiments, however ingeniously contrived, are clumsy and imperfect when compared with the anatomical conditions furnished by the organs of secretion and circulation in the living body. The complicated involution of the glandular surfaces, and the minute interlacement of follicles and blood vessels, increase, to a remarkable degree, their extent of contact with each other, and consequently heighten the activity of their mutual reactions.

Each perspiratory gland of the skin, for example, consists of a minute coiled tube, which, when unraveled, is one-fifteenth of an inch in length. On the posterior portions of the body and

limbs, there are about 500 of these glands to the square inch, on the anterior portions 1,000 to the square inch, and on the palm of the hand and the sole of the foot, 2,700 in the same space. The whole number of perspiratory glands in the body is at least 2,300,000, and the entire length of glandular tubing is accordingly not less than 153,000 inches, or about two miles and a half. It is easy to understand, therefore, that while each perspiratory gland secretes but a small quantity of fluid at a time, the entire amount produced by all of them may be very large.

The subdivision of the circulating currents in the capillary blood vessels is equally minute. It is estimated that the united area of all the capillaries in the body is between three and four hundred times that of the arteries. It does not follow from this that there is three or four hundred times as much blood contained at once in the capillaries as in the entire arterial system; for although the united *area* of the capillary vessels is very large, their *length* is very small. The current of blood has only a short distance to pass over, from the termination of the arteries to the commencement of the veins; but, in making this passage, it is spread out into a multitude of minute streams. The effect of this anatomical arrangement is accordingly to disseminate a comparatively small quantity of blood over a very large space; and when we remember the readiness with which atropine and iodide of potassium penetrate the thick cornea into the interior of the eye, we can readily understand the instantaneous reaction which may take place between the blood, circulating in the capillaries of a glandular organ, and the substances contained in its tissues.

Bernard inserted a silver canula into the parotid duct on the two opposite sides of the face in the same dog. He then injected into the glandular tissue, through the canula on the left side, a solution of iodide of potassium. Immediately afterward, on exciting the secretion of the parotid gland on the right side, the first drops of saliva which flowed from the canula contained evident traces of iodine. In this period, consequently, the substance injected must have been absorbed by the glandular tissue, have passed by the circulation to the opposite side of the body, and exuded from the follicles of the opposite gland. As might be supposed, therefore, when the salt of iodine is injected directly into the veins, the interval of time is inappreciable between the performance of the injection and the appearance of the iodine in the parotid saliva.

The blood, accordingly, is constantly suffering important modifications in its passage through the circulation. A very curious calculation was recently made by Dr. Brown-Séquard, and published by him in the "*Journal of Physiology*" for April 1858, regarding the quantity of fibrin produced and destroyed in the body day by day. The calculation is based upon a singular fact, established by the observations of Simon, Bernard, Lehmann, and Brown-Séquard, viz: that the venous blood coming from the kidneys and the liver is either destitute of fibrin, or contains this substance in much smaller proportion than arterial blood. The fibrin, therefore, disappears from the blood during its passage through these organs; and as it, nevertheless, continues to be found in the general mass of the blood in its ordinary proportion, viz: 2.5 parts per thousand, it is evident that a corresponding production of fibrin must take place somewhere in the body, by which its loss in the liver and kidneys is counter-balanced. The object of the calculation above referred to, is to determine the amount of fibrin thus daily produced and destroyed in the circulation.

Dr. Brown Séquard assumes, in his estimate, that the left ventricle empties itself completely at each pulsation, and deduces the quantity of blood passing through the liver and kidneys from the ascertained calibre of the vessels supplying them. For reasons already given, however, it is perhaps better to depend upon the quantity of blood actually escaping, in a given time, from the divided vessels, as the basis of our calculation. We have found, in this way, that in a dog weighing $14\frac{1}{2}$ pounds, the entire quantity of blood passing through the heart in a day is 247 pounds. The same estimate applied to a man of ordinary stature gives 2,380 pounds per day. The liver and kidneys respectively weigh, on the average, 29 and 4 parts per thousand of the entire weight. As these organs are, if any thing, more vascular than most other parts of the body, it is safe to estimate the quantity of blood distributed to them as bearing at least the same proportion to the entire amount contained in the body. The whole quantity of blood, then, flowing through both the liver and kidneys per day is 78.5 pounds, or 550,000 grains. The daily quantity of fibrin, accordingly, which is destroyed in these organs and reproduced elsewhere, is 2.5 parts per thousand of the above, viz: 1,375 grains. When we remember that a pound of ordinary blood contains only 17.5 grains of fibrin, and that the whole amount of this substance contained in the body at any one time is certainly

not over 355 grains, we find that the fibrin of the entire blood is destroyed and reproduced in the circulation at least three times over in the course of a single day.

However unexpected this result may be, it is nevertheless exactly parallel with certain other facts which have been familiar to us for many years. We know, for example, that 500 grains of urea are daily produced in the blood, and actually discharged with the urine; and yet the proportion of this substance, existing in the circulation at any one time, is so small that it can only be detected by operating on several pounds of blood at once, and is recognized by the microscopic measurement of its crystals. The entire quantity actually eliminated in twenty-four hours can, therefore, be accounted for only by the rapidity with which successive portions of blood pass through the kidneys, thus draining away the excrementitious matter as fast as it originates in other parts of the circulation.

Various other substances are produced and destroyed in this way, during the progress of the internal changes of waste and assimilation. The whole profession is familiar with the experiments, originated by Bernard, which show that sugar is constantly produced in the tissue of the liver, absorbed thence by the blood vessels, carried away by the blood of the hepatic veins, and decomposed in the general current of the circulation. Lehmann has found, as the mean result of six observations on the dog, that the blood of the hepatic vein in this animal, contains sugar in the proportion of about eight parts per thousand, of the dry residue. This makes a little over 1.5 parts per thousand of the entire blood. Now, we know, from what has been said above, that the entire quantity of blood, passing through the liver per day, in the human subject, is not less than 69.02 pounds. The whole amount of sugar, therefore, produced in the liver, carried away from it by the hepatic blood, and destroyed in the circulation during twenty-four hours, is 792 grains, or a little over one ounce and a half.

These facts regarding the circulation of the blood, enable us to appreciate more readily the phenomena of another circulation constantly going on in the body, secondary in importance to that of the blood, but still much more active and abundant than we have hitherto supposed, viz: the lymphatic or absorbent circulation. Here, the movement of the fluids is not exactly a circulation, strictly speaking; since they move only in one direction, viz: from the circumference toward the centre. These fluids originate altogether by transudation and exosmosis from the substance of

the tissues; and flow inward toward the heart, impelled mainly by this force of accumulation. From what we know of the rapidity with which these actions of endosmosis and exosmosis go on in the living body, we are ready to understand that the movement of the fluids thus produced by them may be very active; and yet the results of direct observation on this subject are again found to exceed considerably any of our previous estimates.

In May 1857 a memoir was presented to the French academy, giving an account of some experiments on the lymph and chyle of cows and oxen, performed by M. Colin, of the veterinary school at Alfort, and by M. Bérard, the distinguished professor of physiology of the Faculty of medicine at Paris, the news of whose death has been recently announced. These observers established a fistula of the thoracic duct, just as it emerges from the chest at the root of the neck, to join the great venous trunks in this situation. The experiments were performed mainly for the purpose of investigating another point in the physiology of the chyle, but gave also very remarkable results in regard to the quantity of the fluids passing through the thoracic duct per day. These results I will give in the animated and descriptive language of M. Bérard himself:

"What I am going to say," he observes, "in answer to this objection, will produce a kind of stupefaction in the assembly. The chyle, this precious fluid, which some of those who hear me perhaps have never seen, and which physiologists can usually obtain only in little samples, so to speak, how much of it do you imagine one of our oxen furnished, by his fistula, in twenty-four hours?—EIGHTY POUNDS" (*quarantes litres*). "I confine myself," he adds, "within the limits of the truth."

M. Colin has also published these and other similar experiments in detail. From two experiments on the horse, extending over a period of twelve hours each, he calculates the quantity of fluid passing through the thoracic duct in this animal, as from twelve to fifteen thousand grains per hour, or between forty and fifty pounds per day. This quantity is still greater, according to his observation, in the ruminating animals. In a cow of medium size, the smallest quantity obtained, during an experiment of twelve hours' duration, was a little over 9,000 grains in fifteen minutes—that is, five pounds per hour, or 120 pounds per day. A little over 100 pounds was actually obtained in this manner, in another experiment, from a young bull with a fistula of the thoracic duct.

These estimates, I believe, are not exaggerated. By placing a canula in the thoracic duct of the dog, at the root of the neck, at various periods after feeding, I have obtained the following quantities of chyle: $3\frac{1}{2}$ hours after feeding, 420 grains in an hour, in a dog weighing $24\frac{1}{2}$ lbs.; 7 hours after feeding, 840 grains in an hour, in a dog weighing $54\frac{1}{2}$ lbs.; 13 hours after feeding, 430 grains in two hours, in a dog weighing 31 lbs.; and $18\frac{1}{2}$ hours after feeding, 425 grains in an hour, in a dog weighing 32 pounds. The average of all these results gives the total quantity of lymph and chyle, during 24 hours, as very nearly $4\frac{1}{2}$ per cent. of the entire weight of the animal; and this proportion, in a horse weighing 10 hundred weight, would be 45 pounds, substantially the same estimate as that obtained by Colin, in his experiments at Alfort.

By bringing together the quantities of the different animal fluids secreted and reabsorbed during 24 hours, as above ascertained, for a man weighing 140 lbs., we have the following table:*

Secreted and reabsorbed during 24 hours.

Saliva,	-	-	21,164	grs.	-	-	-	3.020	lbs.
Gastric juice,	-	-	98,000	"	-	-	-	14.000	"
Bile,	-	-	16,940	"	-	-	-	2.420	"
Pancreatic juice,	-	-	2,500	"	-	-	-	0.357	"
Lymph and chyle,	-	-	44,100	"	-	-	-	6.300	"
								26.097	"

From all these observations and their results, we gradually obtain a deeper insight into the nature and phenomena of the circulation as a whole. The capillary circulation, more especially, is one which has long presented to the mind of the physiologist many points very difficult of explanation. What is the nature of the force which keeps up this continuous movement of the blood? The only mechanical impulse, which can seriously influence it, is the force of the heart's contraction. But it is plain that the heart's impulse alone is not sufficient to explain the varied phenomena of the capillary circulation. It does not explain the congestion of a square inch of skin, from the action of a local cause, while the neighboring parts are unaffected, and the heart's action itself neither increased nor diminished. It does not explain the sudden excitement and vascularity of the digestive organs on the introduction of food, nor the periodical hemor-

* It will be observed that, in all these cases, the fluids are calculated at their minimum quantity, according to the present state of our knowledge.

rhage of the uterine mucous membrane in menstruation. Moreover, direct experiment shows conclusively that the heart's action is not the cause which produces the movement of the blood in the capillaries. If the portal vein and hepatic artery be suddenly obliterated by a ligature, the liver almost immediately grows pallid, and empties itself of blood in the course of a few seconds. Every thing indicates that the capillary circulation is a local phenomenon, dependent on some force resident in the capillaries themselves, and in the neighboring tissues. From the facts which have now been brought together, I think we are better able to understand the exact nature of this force, and the mode in which it operates.

We find that the blood and the tissues are the seat of a constant and reciprocal process of endosmosis and exosmosis. The tissues absorb from the blood; the blood absorbs from the tissues. Consequently, the ingredients of the blood, and even its quantity, are changed while passing through the capillaries of an organ. The hepatic blood contains sugar, which did not exist in the blood of the portal vein. The blood which returns to the heart by the pulmonary veins, is less in quantity than that which passes out from it by the pulmonary artery; for the carbonic acid and watery vapor exhaled from the blood in the lungs weigh more than the oxygen which it absorbs in the same organs. For a similar reason, less blood returns from the kidneys by the renal veins than passes into them by the arteries, since the blood loses, during its passage, water, urea and salts, which are discharged with the urine. On the other hand, the veins of the portal system bring away from the intestine a larger quantity of blood than is supplied by the mesenteric arteries; for the vessels absorb from the intestinal cavity the products of digestion, and thus become crowded with new ingredients. It is even maintained by a very careful and experienced observer,* that the entire quantity of blood undergoes incessant variations, corresponding with the different periods of digestion, and that, in the same animal, it is nearly twice as great during the period of active intestinal absorption as it is in the intervals of the digestive process.

The actual phenomena, therefore, of the capillary circulation may perhaps be best described in the following terms: *The blood which passes out of an organ by the veins is not the same blood which passed into it by the arteries. The blood which arrives by the arteries is instantly seized and acted*

* Bernard: *Liquides de l'Organisme*. Paris, 1859. Vol. i, p. 419.

upon by the tissues of the organ. Its fluid ingredients are taken up by absorption, and at the same time are replaced by others, exuded from the neighboring parts. It is not only certain ingredients of the circulating fluid, therefore, which are produced and destroyed in the interior of the body, but it would be a much more exact expression to say that the *entire blood* is constantly altered and reconstructed in its passage through different parts of the circulatory system. Every organ produces in it a different modification, and this modification is constantly repeated, as successive portions of blood arrive by the arteries and are carried away by the veins. The blood which passes off by the veins is accordingly to be regarded as supplied, in great measure, by the tissues of the organ itself—very much as a fluid secretion is exuded from the follicles of a gland, and carried off by the excretory duct—or as the lymph is absorbed from the substance of the tissues, and carried inward by the lymphatic vessels.

We find, therefore, that the digestive and other secretions, together with the lymph and chyle, give rise to a kind of internal circulation, or interchange of the animal fluids, secondary to the circulation of the blood; and that the whole amount of these fluids exuded and reabsorbed, in the human subject, is over twenty-five pounds per day. The incessant activity of the vital operations is accordingly one of the most singular phenomena of the living body, and it becomes still more remarkable when subjected to the test of direct examination and actual measurement.—*Trans. N. Y. Academy of Medicine.*

II. "*Never too Late to Mend.*" (Communicated for the Boston Medical and Surgical Journal.)

MESSRS. EDITORS—You doubtless have read the excellent novel of this name. A lady once recommended it to the wife of a medical acquaintance of ours. Said he, looking gently up from Durkee's handsome page, "Do not, I beg you, madam, do that, for my wife sits up till midnight or more, mending my old clothes, and should she read that book it is odds if she come to bed till daylight."

"A novel text for a medical sermon." "It is a novel one; we'll see what sort of an *improvement* we can get out of it."

In my note book, I have some cases which might pretty

well have been despaired of. Some were. But after all, some of them got well, in spite of both diagnosis and prognosis. Perhaps you may not think them unworthy your fair pages.

Dr. Rush, of whose lectures it was my privilege to attend two whole courses half a century ago—after attending one of which I was admitted to examination, and received my degree, for which I afterwards got an *ad eundem* at another university, and which was the only other degree which I ever got, and which I believe any body graduated almost any where, may get for \$5—Dr. Rush never despaired of a case. With him, literally, “while there was life there was hope.” Consumption he believed was to be cured. Its remedy was some where, and would be found, he used to say. He prophesied a remedy for pain. A medical friend of his attended a woman in labor, who was dead drunk. She was delivered while in this state. She had no pain, and woke up wholly unconscious of what had happened. The womb went on with its work, while all voluntary work had ceased. Sensation was lost, but not organic power. Dr. Rush’s prophecy has been fulfilled in our day, and, most grateful are we, in our own city.

Dr. Isaac Rand, sen., who died an octogenarian, once said, that he would rather be condemned by the whole College of physicians of England, than by the twelve judges. The doctors might be mistaken, he would say, with a twinkle in the tail of his light blue eye, but from the criminal assizes there was no escape.

I once was attached to a hospital, and patients were now and then discharged *incurable*. Some of them afterward *got well*. There was a case for memory. It was of a favorite domestic of two maiden ladies—a maid herself—much valued in the then comparatively quite small community in which these ladies lived. She was not young, nor old, technically, as the word applies to women. She entered the hospital for dropsy, at first ascites, but in process of time having extensive anasarca superadded. It was a bad case to look at; great sympathy. It was a day of heroic medication. She had elaterium, and was aware of its results. Salivation came in for a fair share in the treatment. But no improvement. “*As yesterday*”—“*as before*”—*literally*, was the daily record. She passed into my service. I being then a young man, followed suit—taking it for granted that diagnosis was all right, I never, not dared, but never thought of making it a question. She was at length discharged *incurable*—and not long after, the old maid had twins. I believe I have *never* used the word “incurable” since.

But to my note book.

Mrs. —, about 30, had her first and only child some years ago, and has never been quite well since. She grew worse about four years ago. Her complaints always referred to the left iliac and pelvic regions. She took various advice, always describing her symptoms distinctly, for they were persistent, and very distressing. The last physician she consulted said her womb was diseased, and applied caustic to the os uteri. She told him of the pain and soreness about and above the left groin, but he made no examination there. Mrs. — called on me about a fortnight after she consulted Dr. —. This was the beginning of this year.

I found Mrs. — emaciated, weak, dispirited, and withal suffering much. No disease of the os uteri was detected. A firm flattened tumor was felt between the womb and the left sacro-iliac region. Its lower edge was semi-lunar in outline, hard, very sensitive, the least pressure or touch giving severe pain. It was clearly a portion of the uterine appendages, much compressed between the womb and side of the pelvis referred to. In the iliac region was a large tumor, coming up from inside the brim, and immovable. This was as tender on pressure and as acutely painful as was what seemed its extension into the pelvic cavity down from the brim. Dysuria and obstinate costiveness made very annoying complications of this case.

The disease was evidently on the increase. The iliac tumor grew. It was irregular of surface, nodulated, hard, increasing in pain and tenderness. The skin, as at first, did not all adhere to it. Whatever changes, there was no tendency to the surface—no pointing, no redness, no tenderness of integument. Then dysuria increased—daily chills, heat, and sweat. This last was so profuse as to make the nights wretched. The pulse grew rapid, small; emaciation more and more pronounced. One day the catheter was used. Some ill looking urine was drawn, and a clear puff of wind came through the catheter, with pus. Here was light. The abscess, of whatever organ, the existence of which the chills, &c. had so strongly declared, was opened into the bladder. From this day the urine was loaded with pus. It was daily kept in a translucent glass bottle, and the quantity of pus daily seen. Some relief followed soon, and which constantly was more declared. The iliac tumor grew smaller, but the compressed portion of it in the pelvis did not for some weeks change. At length it grew smaller, and at last, with its iliac and abdominal extension, entirely disappeared, and now, the middle of July 1859, not the least vestige of either remains.

So deeply and so long had disease existed in this case, that convalescence has been very slow, and recently much trouble has been felt in the *right* iliac. So tender has it been that Mrs. ——— has been sure that another tumor was forming there. But nothing of the kind exists, and she has just returned from a fortnight's stay in the country, in better health than for years. Her appetite and digestion are good. The bowels and bladder are well. The period is regular and easy. She is doubtless getting well.

Here was a case of years' standing, and for the cure of which much had been done, and, as the patient said, had cost much money, and nothing of good to show. When it came under my care, it was to be *cured* indeed, but in a literal sense of that much abused word—namely, *taken care of*. The indication was simple, and as clear as day—namely, to make the patient as comfortable as possible, and to sustain her so far as this might be done. Her recovery was necessarily to be through a slow but constant process of waste. The indication was not to interfere with the process any farther than to supply its means, knowing surely that repairs or mending would come when it was needed. And it did come.

What, or where, was the seat of this disease? In the broad ligament. Its pelvic manifestation pointed clearly to that uterine appendage as its seat. Would not its irregular surface point to the ovary? As far as I have been able to examine enlargement of this, its surface has been smooth, uniform. I can understand how the successive process of inflammation through different portions of the ligament might produce irregularity of outline. We know that a diseased or inflamed ovary grows rapidly, whether vesicular or solid, so that in two or three months one has come to fill the whole cavity of the abdomen. There is much obscurity of pathology in the diseases of the organs referred to.

CASE I.—*Ovarian disease*.—Miss ———, about 30, of M., had observed herself to be increasing in size for some time, and at length so striking was this, and as suffering attended, a physician was called in. He discovered a large, solid tumor, uniformly occupying much of the lower part of the abdominal cavity. The tumor increasing rapidly, the patient came to Boston and consulted me. I learned, in addition to the above, that dysmenorrhœa had occurred recently, and was on the increase. In the course of the disease, this became a leading and exceedingly distressing accompaniment.

Examination and the history of the case showed it to be an ovarian tumor, and the largest *solid* one which had come

under my observation and care. Its pelvic extension was not so striking as in the preceding case—did not so completely fill the pelvis. But it was enough to produce, monthly, great suffering. The treatment was the same as in that case. The tincture of iodine was applied by a soft paint brush over the whole external tumor. When the skin was encrusted by it, it was washed off with alcohol. If sore, the tincture was omitted for a while.

This lady was of good mind, and large culture. She understood exactly what her case was, and its tendencies, and was faithful to medication. The tincture was thoroughly tried. And as to the liq. calc. mur., I have never known it more liberally taken. Its use was begun with the average dose, and was to be gradually increased as the stomach would bear. Miss ——'s residence was far from mine, and months would pass without a visit to me. I asked accidentally, one day, what quantity of the liquor she had reached. Nearly 400 drops, three times a day, was the reply. Not the least trouble was experienced.

The tumor seemed at length to have reached its *acme*. It could no farther go—at least, this seemed the case. A very sudden and very important change occurred. During a menstrual period of unparalleled severity, the tumor left the pelvis as by a bound, and from that moment dysmenorrhœa ceased. Examination showed the pelvis to be quite clear. There was no trouble produced elsewhere. Respiration remained as easy as it always had been, and free exercise gave no annoyance.

I have not seen Miss —— for a long time. She left home, and went to Pennsylvania, where she became a teacher in a large institution for the education of young ladies. I have had letters from her, and in one was a request that I would name to her some physician who had experience of cases like hers, and who had attempted its radical cure. I named one, but have not heard from her since.

I would add, in conclusion, that the general health, flesh, color, cheerfulness, and strength, remained as perfect when Miss —— last called on me, as at her first visit; the menstrual function being as regular and as painless as it ever is.

CASE II.—*Ovarian disease.*—Miss ——, over 30, was seized with a very severe colic, with retention of urine, and desired my attendance. On reaching the address, I found her in an agony of suffering referred to the bowels and bladder. A large tumor occupied the lower half, and more, of the ab-

domen. It was protuberant, extending laterally as well as elsewhere. It was hard, solid, without fluctuation or tenderness—entire ignorance of when it began, though remembered a long time back. Often has had attacks of pain, but none so severe as this—pains distinctly intermittent, and with the state of the abdomen not unlike to labor. Dysuria a common accompaniment of abdominal suffering. On attempting to introduce a catheter, a tumor was felt to fill the pelvis, not partially, but entirely. It was impossible to pass between it and the vagina, or pelvis, any where. Menstruation was reported regular, but how its products got by the obstructing mass, was unaccountable. Great relief followed the catheter, and opiates stilled the colic. A case was remembered which was the exact counterpart of this. It was in the hospital, in an old lady who died worn out with the abdominal and vesical suffering, and especially by the want of nutrition which attended the difficulty of retaining or digesting food. Examination after death showed an ovarian tumor occupying much of the abdomen and the whole pelvis.

There was a fact in Miss ——'s case, which though not strictly professional, became of importance from what made professional attendance necessary. Miss —— was engaged to be married, and to a clergyman. Some years before, I was consulted in a precisely parallel case, so far as the disease was concerned, but the lady was married, and to a clergyman. Said the late Dr. —— to me—who consulted me in this case—"if this lady had been married according to the ritual of my church, and had such an *impediment* as this been known to exist, the bans would have been forbidden."

Miss —— was at length relieved of the paroxysm of her disease, and treatment was begun, with a view either to arrest or remove the disease. During this, her intended marriage was alluded to, and the nature and tendency of her disease fully and frankly stated, leaving it with her to determine what she should do. The engagement was broken off.

The treatment employed was the internal and external use of iodine, with occasional substitutes of the liquor calcis muriatis for the internal use of iodine. This treatment was continued, under my care, for months and for years. Its first noticed effect was the arrest of growth. This was ascertained by careful admeasurements of the abdomen. The next, and most important change, was reduction in size, both in the abdominal tumor and in its prolongation into the pelvis. When once begun, the diminution rapidly in-

creased, until the whole great mass disappeared. I examined Miss —, and ascertained this fact. I did the same more than once afterward, and at long intervals, and found no return of the tumor, her health being excellent. She still lives, in a distant state, but I am quite sure I should hear if any return of her old disease had occurred.

[To be continued.]

III. *Notes on some of the Chemical Reactions of Strychnia.*

By T. G. WORMLEY, M. D.

IN the following paper it is proposed to give the result of some experiments in regard to the relative value of the various tests which have been proposed for the detection of strychnia.

The various solutions were made with great care from pure strychnia, generally dissolved in just sufficient quantity of dilute acetic acid, and the reagents were generally applied by means of a glass rod dipped in a saturated solution of the reagent, to a *single drop* of the strychnia solution, delivered upon a glass slide, from a graduated burette which furnished a grain of fluid in each drop. Therefore, each drop contained an amount of pure strychnia, corresponding to the fractional dilution of the solution.

To prevent repetition in giving the various tests, the amount of strychnia operated upon will frequently be stated simply in the form of a fraction, it always being understood to imply the fractional part of a grain of strychnia, in one grain of water.

1.—*Ammonia.*

1. 1-100th grain of pure strychnia in one grain of water, gives with ammonia an immediate white precipitate, at first amorphous, but very soon it begins to assume a crystalline form, and in about three minutes the drop becomes a solid mass of lengthened prisms.

2. 1-500 gives no immediate precipitate, but in a few seconds beautiful stellate crystals begin to form, which very soon become abundant.

3. 1-1000 behaves much the same as 2—not so abundant.

4. 1-2500, with the microscope, crystals begin to form in about a minute, in three minutes they are very obvious to

the naked eye. If the drop be rubbed with the glass rod, rings of granules are very obvious to the naked eye in a few seconds, and the ppt. is much more abundant than when not thus treated.

5. 1-5000, no indication after stirring for several minutes, except when viewed with the microscope, a few granules appear.

From the above, the limit of the test, when applied to a single drop, is when it holds in solution 1-2500th its weight of strychnia.

2.—*Potash.*

This reagent behaves much the same as ammonia, its limit being about the same. In applying this test it is very important that the proper quantity of the reagent be added, for if either too much or too little, no ppt. will be produced.

3.—*Carbonate of Potash.*

1. 1-100th grain of strychnia gives an immediate white precipitate of star-like crystals, which will redissolve if a sufficient quantity of the reagent has not been added.

2. 1-500, in a few seconds small granules, prisms, and a few starlike crystals begin to form, which soon become rather abundant.

3. 1-1000, in a few seconds, lengthened granules may be observed with the microscope, in a few minutes they are obvious to the naked eye.

4. 1-2000, after a few minutes small granules are very perceptible.

5. 1-5000, after several minutes, no indication with the microscope.

4.—*Carbonate of Ammonia.*

In 1-100 and 1-500 solutions the same results as with carbonate of potash. In a 1-1000th solution, no indication after 15 minutes.

5.—*Iodide of Potassium.*

1. 1-100th, solution in a few seconds gives a white crystalline ppt. of tufts of long prisms.

2. 1-500, it is several minutes before crystals begin to form; if the solution be stirred, however, they begin to appear in about two minutes.

3. 1-1000, by stirring, crystals begin to appear in about five minutes.

4. 1-2000, crystals begin to appear in about seven minutes.

5. 1-5000, with the microscope crystals can be seen in ten minutes—in about twenty minutes they are just perceptible to the naked eye.

6.—*Sulphocyanide of Potassium*.

1. 1-100, gives an immediate mass of white crystals.

2. 1-500, in a few seconds the crystals are very abundant.

3. 1-1000, by rubbing, in a few minutes crystals begin to form.

4. 1-2000, after several minutes, a few crystals may be observed upon the border of the drop with the microscope.

7.—*Tannic Acid*.

1. 1-10000, gives an immediate white curdy precipitate.

2. 1-20000, gives very satisfactory results.

3. 1-30000, after a few minutes the ppt. is quite perceptible.

4. 1-40000, after several minutes it is just possible to observe a white cloudiness.

The satisfactory limit of the test is when it is applied to a drop of fluid holding in solution 1-25000th its weight of strychnia. The ppt. is very soluble in acetic acid; and if obtained from dilute solutions, it is, also, soluble in a drop of potash, giving a red liquid; but when produced from strong solutions, the ppt. will not all dissolve in a drop of potash solution.

8.—*Bichloride of Platinum*.

1. 1-1000, an immediate yellow amorphous ppt., soon becoming granular.

2. 1-3000, in a few moments an amorphous ppt., which soon becomes granular.

3. 1-5000, in a few minutes the results are very good.

4. 1-10000, if the solution be rubbed, small granules begin to appear in a few minutes, and soon the result is satisfactory.

9.—*Terchloride of Gold*.

1. 1-1000, gives a bright yellow amorphous ppt., which soon becomes partly granular; most of the granules float

upon the surface of the drop. A portion of the ppt. collects into little yellow flakes.

2. 1-10000, gives an almost immediate precipitate.
3. 1-30000, gives very satisfactory results.
4. 1-40000, at this degree of dilution the ppt. is still perceptible, but not satisfactory.

When the ppt. obtained from a solution containing 1-5000 or less of its weight of strychnia is boiled, the ppt. will dissolve and give a yellow solution, from which it will again be deposited with little or no change upon becoming cool. If the solution contains more than 1-5000 its weight, the ppt. will not entirely dissolve upon boiling; after cooling there will generally be a metallic gilding upon the sides of the tube. The ppt. produced from 1-5000, or more, dilute solutions will readily dissolve, without change of color, upon the addition of a drop or two of potash solution; if then the solution be boiled it will become a fine purple color, with sometimes a purple ppt. When the ppt. is from a stronger solution than above stated, it does not readily dissolve in potash, and when the mixture is boiled it yields a fine purple solution, with more or less of purple tint.

10.—*Chromate of Potash (Yellow).*

1. 1-100, gives an immediate yellow mass of crystals, soluble in thirty drops of strong acetic acid.
2. 1-1000, crystals begin to form in a few seconds, but they are not very abundant after standing 15 minutes.
3. 1-2000, with the microscope a few prisms may be observed in eight minutes, but to the naked eye no indication after 20 minutes.

11.—*Bichromate of Potash.*

1. 1-100, an immediate mass of brilliant yellow dendroidal crystals.
2. 1-1000, in a few seconds much the same as 1.
3. 1-5000, crystals began to form in a few seconds, in a few minutes they are abundant.
4. 1-10000, in a few minutes beautiful octahedra appear, resembling those of oxalate of lime.
5. 1-15000, by rubbing, the crystals are obvious with the microscope in a few minutes, and in several they can readily be seen with the eye.

The precipitate produced by this reagent is not as readily soluble in acetic acid, as that produced by the yellow chromate of potash.

12.—*Carbazotic Acid*.

This, and the three following tests, we have formerly recommended in our lectures. The only specific account we have seen of any of them, is in the recent edition of Taylor on Poisons, in which the iodine test is suggested.

An alcoholic solution of carbazotic acid will produce with—

1. 1-100 grain of strychnia an immediate yellow amorphous ppt., soon becoming tufts of a twig-like form.
2. 1-1000, almost immediately a ppt., soon becoming same as 1.
3. 1-5000, by rubbing a few seconds, a copious deposit of granules.
4. 1-10000, in about a minute much the same as 3.
5. 1-20000, in a few minutes small granules are very obvious.

13.—*Chloride of Palladium*.

1. 1-100, an immediate dirty white ppt., soluble in acetic acid, insoluble by boiling.
2. 1-1000, an immediate yellow precipitate.
3. 1-5000, in a few seconds the ppt. is perceptible, and soon becomes pretty good.
4. 1-10000, after rubbing for several minutes a few granules can be observed with the microscope.

14.—*Iodine*.

Of the various tests recommended for strychnia, this is the most delicate. It was applied in the following experiments, by dissolving three grains of iodide of potassium in one fluid drachm of water, and then adding one grain of iodine.

1. 1-1000, immediately a copious brownish yellow amorphous ppt., soluble in alcohol and ether, but only soluble in large excess of acetic acid. The ppt. partially dissolves in a few drops of potash solution, but is immediately replaced by a dirty white precipitate.
2. 1-5000, a yellowish ppt., soluble in potash, and replaced by a dirty white precipitate.
3. 1-5000, the precipitate dissolved in potash gives a faint white precipitate.
4. 1-80000, the ppt. is immediately produced, and soon collects into little yellow flakes.

5. 1-100000, if the drop be touched with a small drop of the reagent upon the end of a glass rod, it gives immediately a very obvious yellow precipitate.

If a few drops of the last named solution be placed in a watch crystal, and a drop of the test fluid be placed by its side, and allowed to flow into the solution, as they meet yellow streaks can readily be observed, and the solution will become turbid.

15.—*Bromine.*

This reagent was prepared by saturating a strong solution of hydrobromic acid with bromine.

1. 1-1000, gives an immediate bright yellow amorphous ppt.

2. 1-10000, a greenish yellow precipitate.

3. 1-50000, a dirty yellow ppt., which after a time nearly all dissolves.

4. 1-80000, the ppt. is perceptible but soon dissolves.

16.—*Color Test.*

It is well known that if strychnia or its salts, be dissolved in sulphuric acid, and then a small quantity of bichromate of potash, ferricyanide of potassium, peroxide of lead, or of peroxide of manganese, be added, a series of colors are developed. This is known by the name of the color test. We have succeeded best by placing the strychnia, or a drop of the solution evaporated to dryness, in a watch glass, and by its side a drop of strong sulphuric acid, into which a fragment of bichromate of potash was introduced, and stirred until it imparted a yellow color; then by inclining the watch glass the colored sulphuric acid was allowed to flow over the strychnia.

1. 1-1000 grain of strychnia in one drop of water, gave in a majority of a number of experiments very satisfactory results, however, in some the reactions were just perceptible. In solutions stronger than the above the results were always very satisfactory.

2. 1-5000, in many cases we failed to get any indication, in others there was a faint trace of color, which very rapidly disappeared. In no instance was there such a reaction as should be sufficient for medico-legal purposes.

3. 1-1000 of a grain, dry, will always give a fine reaction; by allowing the acid to flow upon a portion of the deposit at a time, several indications may be obtained from the same deposit.

4. 1-5000, dry, in a majority of instances the results were very good; in some, however, they were very faint. The success of the experiment depends much on the character of the deposit left by evaporating the solution to dryness; sometimes the principal part of it is in the form of a ring, which, when examined with the microscope, consists of well-defined crystals; at others, the deposit is a confused mass distributed over the space occupied by the drop. In the latter case the result will not be nearly so satisfactory as in the former.

5. 1-10000, in a number of cases manipulated differently, the majority gave no indication; some few a slight trace, but in no instance was the reaction satisfactory.

As the color test is relied upon, perhaps, more than any other for medico-legal purposes, it is important to remember that it is interfered with by the presence of morphia. When *one part of strychnia* is mixed with

1. One part of morphia it gives very good results. The colors, however, are not so bright as with strychnia alone.

2. $1\frac{1}{2}$ of morphia. If a small quantity of this mixture is used the reaction is very good, but in a larger quantity, the reaction is just perceptible.

3. 2 of morphia. A small quantity of this mixture will give a pretty good reaction; 1-30th grain gives but a mere trace.

4. 3 of morphia. A very small quantity of this mixture will give but little indication, and a larger quantity gives no reaction indicative of the presence of strychnia.

17.—*Physiological Test.*

We are indebted to Marshall Hall for this test. It consists in administering strychnia to frogs, by which they are rendered violently tetanic; he recommended the frogs to be placed in a solution of the poison. Dr. Harley proposes to inject the liquid into the thoracic or abdominal cavity of the frog.

In the following experiments a small portion of the strychnia solution—from $1\frac{1}{2}$ to 2 grains of fluid—was taken up by a pipette, the end of which was then introduced into the stomach of the animal, and the solution dislodged by blowing through the tube. The frogs were then placed under an open glass receiver. The species used was the *Rana halmecina*.—*Kalm*. From experiments made upon more than one hundred individuals, we are led to believe that this species is more sensitive to the effects of strychnia than any of

the other several species found in this locality; however the difference observed may have been due to some other cause than difference of species. The weight of the frogs used in the experiments detailed below, varied from 18 to 45 grains.

1. When a solution holding 1-100th its weight of strychnia was used, the animals immediately became rigid, with violent tetanic spasms, and died, on an average, in 8 minutes.

2. When a 1-1000 solution was used, the symptoms usually began in about three or four minutes.

3. 1-10000 solution: the symptoms appeared in some in ten minutes, in others they were delayed as long as 24 minutes.

4. 1-20000 solution: of 22 frogs used, in 17 of them the symptoms appeared in from 27 to 45 minutes; in the other five there were no unequivocal symptoms; there was, however, very great prostration, and some slight tetanic movements.

5. 1-30000 solution: of 10 small individuals used, eight were seized in 45 minutes, the others did not show unequivocal tetanic spasms.

Columbus, Ohio, August 23, 1859.

CHRONICLE OF MEDICAL SCIENCE.

MEDICAL PATHOLOGY AND THERAPEUTICS.

1. *Inhalation of Quinic Æther in the Treatment of Intermittents.*

In the *Gazette Médicale de Strasbourg* (June 25, 1859), Dr. Eissen, the editor, has extracted from a Vienna medical journal (*Esterreichische Zeitschrift für Practische Heilkunde*, No. 22, 3 Juin 1859), an account of the remedial power of quinic æther by inhalation, in the treatment of intermittent fever—an outline rather than a translation of which will occupy all the space that can now be devoted to this subject.

Dr. Eissen justly remarks, that in many cases of obstinate intermittents the energetic administration of quinine is attended with gastric complications, and almost always with repugnance—inconveniences which the inhalation of quinic æther obviates.

Quinic æther, invented by M. Manetti, and experimented upon by M. Pignacca of Milan, is a perfectly limpid, colorless liquid, less volatile than sulphuric æther, being, nevertheless, sufficiently so at the ordinary temperature, leaving no residuum. It has an agreeable odor, reddens tournesol paper, and mixes readily with distilled water; the vapor from which escapes slowly, having an agreeable penetrating odor.

This substance prepared by the distillation of the quinate of lime (quinat de chaux) obtained incidentally during the preparation of the sulphate of quinine with sulphuric acid and alcohol of a specific gravity of 1.184, in the proportion of one pound of the quinate of lime to as much sulphuric acid and 44 ounces of alcohol, mixing slowly the alcohol and acid that these liquids be not overheated; then enclose the quinate of lime in a tubed retort of sufficient size to contain a little beyond that of the twofold mixture; decant little by little from this mixture of the two liquids, and finish by moistening completely the quinate of lime, stirring it cautiously. Afterwards it is to be distilled over a slow fire in a sand bath, until 20 ounces shall have passed into the receiver, which must be distilled a second time upon the chloride (chlorure) of lime, rendering it anhydrous.

Drs. Wurzian and Groh, physicians of the Austrian army, in 1855, at the military hospital of St. Ambrose, at Milan, experimented with this preparation, having chosen with this purpose, six patients suffering from intermittent fevers; patients who had not previously employed any remedy; also one, the seventh, who had been using unsuccessfully the compound tincture of cinchona.

The six patients inhaled from one to three grammes, placed on a compress folded in the form of a cornet or horn, so as to cover the mouth and nose. They were directed to make deep inspirations. The inhalation repeated at short intervals, always with the same dose, began some time before the expected access. If the inhalations were made during the apyrexial period, no remarkable symptom was noticed except an acceleration of the pulse and of the respiration. The patients experienced during this process, pleasure, having had no cough or other disagreeable symptom. If the

inhalations were made at the commencement of the algid period, they produced immediately a feeling of comfort (*senti-ment de bien-être*), so that it will be difficult to find a more agreeable febrifuge.

With a single exception, all who submitted to this medication, declared that the shivering and coolness instantly diminished; the access having been much lessened both in duration and intensity. The tumefaction of the spleen was dissipated. Six of the seven cases observed at Milan were promptly and radically cured; the unsuccessful case (the seventh) failed because the dose was insufficient and the inhalation imperfect.

Dr. Groh subsequently employed this remedy at the hospital of Olmutz, as well as in his private clientèle, and always with remarkable success.

It is a matter to be regretted that the chemical constitution of this medicinal preparation has not been determined with exactness.

These practitioners have used upon other fever patients inhalations of sulphuric æther in which the sulphate of quinine had been dissolved, which, however, had no other effect than that of increasing to an insupportable degree, the hot stage of the fever.

2. *On the Use of Saccharated Lime in Medicine.* By JOHN CLELAND, M. D., Demonstrator of Anatomy in the University of Edinburgh.

The great solubility in water of lime, in the presence of sugar, first came under my attention in Paris, four winters ago, in the laboratory of M. Würtz, in the *Ecole de Médecine*, where solution of saccharated lime is used in determining the amount of nitrogen in organic substances, by the sulphuric acid method. It then occurred to me that this solution would be a useful agent in medicine; for it was evident that, while the lime water in use was far too weak a preparation to develop to advantage the therapeutic properties of lime, its utility was such as to render it highly probable that a sufficiently strong solution would be at once valuable as a tonic and antacid.

Sugar combines in two or more proportions with lime, and on this subject I shall quote from M. Regnault (*Cours Élémentaire de Chimie*, vol. iv, p. 138). "Two combinations may be obtained of cane sugar with lime. The first is produced by pouring a solution of sugar on an excess of

slaked lime, when a combination is formed very soluble while cold, and which is separated by filtration. If the fluid be heated to ebullition, the greater part of the combination is precipitated, for it presents the remarkable property of being much less soluble when heated than in the cold. It may even be washed with boiling water and then redissolved in cold. This saccharate of lime, dried at 212° , has the formula $3\text{CaO} \cdot 2(\text{C}^{12}\text{H}^{11}\text{O}^{11})$. If, on the contrary, hydrated lime be added in small quantities to a concentrated solution of cane-sugar, until the last added portion refuses to dissolve, and alcohol be then poured into the liquor at 180° fahr., a saccharate of lime is precipitated which has the formula $\text{CaO} \cdot \text{C}^{12}\text{H}^{11}\text{O}^{11}$. The solutions of saccharate of lime have a strongly alkaline reaction; they attract carbonic acid rapidly from the air, and crystals of carbonate of lime, exactly similar to native crystals of that substance, are deposited on the walls of vessels containing them. Solutions of cane-sugar can, besides, dissolve very various quantities of lime, according to their concentration and temperature. On ebullition, they deposit strongly basic saccharates which contain from 3 to 4 equivalents of base."

For therapeutic purposes the first described compound is best suited, for it is the most soluble, and obviously it is advantageous to have as small a proportion of sugar as possible. Instead of pouring the sugar in the form of syrup upon the lime, I find it more convenient to mix the slaked lime and the sugar, and then add the water. The following is a very good formula:—Slake 8 ounces of quick lime; rub up with it 5 ounces of white sugar; add 1 pint of water; stir for some time, till the hard stiff masses which the sugar and lime are liable to run into are as much as possible dissolved; then filter. The product should be perfectly clear, and of only a slightly yellowish tint. A solution made in this way will contain 18 grains of lime in every ounce by weight, and altogether about 106 grains of solid matter to the ounce. Taken undiluted, a few drops are sufficient to roughen the tongue. When diluted, the taste is at first an acrid one of lime; but this is immediately replaced by a sweet taste in the back of the mouth, admitted to be pleasant. Made as just recommended, the solution is not liable to decomposition unless it is exposed to the air. By employing a smaller proportion of water to lime, a still stronger solution may be obtained, but not with any practical advantage, as there is increased difficulty of filtration and greater tendency to decomposition. The strongest solutions are scarcely, if at all, affected by boiling; but if diluted, a copious precipitation

takes place on application of heat. This, however, will not serve as a test of strength, as addition of sugar in sufficient quantity will make any solution, of whatever strength, remain clear on ebullition.

My first trials of the medicinal effects of saccharated lime were made in the winter 1856-7, with solutions made by myself and by Mr. Stewart, druggist, Inverleith Row. After I had quite satisfied myself of its value, in spring 1858 I gave directions for making it to Messrs. Duncan, Flockart & Co., and recommended it to the attention of various members of the medical profession in Edinburgh.

I shall not enter largely into the therapeutic effects of this preparation, but only give a cursory indication of them, basing as I do my title to speak on the subject simply on my being the first to introduce it as a remedy. It is of course a powerful antacid, and probably the best we have, since it is stronger and pleasanter than magnesia, and does not weaken digestion like the alkalies. Far from doing so, its most important use is as a tonic of the alimentary system in cases of obstinate dyspepsia. As such, its action is much more powerful than that of the vegetable stomachic tonics. It is suitable for cases with too little as well as for those with too great secretion of gastric juice, no doubt because the former state of matters is obviously a result of atony, which the lime removes. It seems particularly serviceable in gouty constitutions. In the dyspepsia of hysterical and anemic cases it does not seem to be of great use. Care should be taken to tell the patient not to take it before breakfast, as it sometimes causes a degree of nausea in the morning, when the stomach is empty. It suits very well to take it immediately after meals; its alkalinity does not at all interfere with digestion. Practitioners seem generally to take up the prejudice before hand, that saccharated lime must be liable to produce constipation, probably judging so from the action of chalk; but I wish particularly to insist that it has not, in the slightest degree, any tendency to occasion such an effect. On the contrary, it is a very valuable means of overcoming gradually that chronic constipation which is so frequent an accompaniment of dyspepsia; and persons who have for years been in the constant habit of using aperient medicines have been able to abandon them in great measure after taking this remedy for some time. In a single instance it acted as a purgative, so that its use could not be continued. It will be found serviceable in checking the diarrhoea of disordered digestion, acting as lime water does, only that the latter is so dilute that it is often impossi-

ble to administer it to adults in the quantity desirable. Patients who take saccharated lime habitually get to like the taste, and seem to think it exhilarating. It may be found useful also in allaying the cravings of the intemperate. I have no doubt that, if it be fairly tried, practitioners will find it an exceedingly useful remedy. It may be given in doses of from 20 or 30 to 60 minims or more, in a glass of water, two or three times a day.

I shall venture, in conclusion, to suggest that the large and various set of remedies embraced in the general name of tonics tend somewhat to group themselves in three clusters, corresponding to the three great systems developed from the three layers of the embryo, viz: tonics acting primarily on the musculo-nervous system, such as quinine and strychnine; those acting primarily on the vascular system, such as iron and manganese; and lastly, those acting primarily on the alimentary system, among which lime is most prominent, and, after it, such vegetable tonics, as gentian, calumba, quassia, etc.

3. *On the employment of Chlorate of Potass in Mercurial Stomatitis, and in other diseases of the Mouth.* By M. J. V. LABORDE.

We give the conclusions arrived at in this interesting and important memoir, which obtained the Corvisart prize for 1857.

The chlorate of potass exercises a *distinctly curative* action. In no case tested was this action found deficient.

It possesses, besides, a preservative or prophylactic action, which permits of the administration, during one or two months, of the protiodide of mercury in doses of from fifteen to twenty centigrammes a day without the least injury to the cavity of the mouth; and the proof of such immunity being due to the chlorate of potass, is found in the fact of mercurial stomatitis being at once developed upon leaving off its use.

The time required for treatment of confirmed stomatitis varies with the intensity of the case. In ordinary instances, it never exceeds four days; in some extraordinarily severe cases, eleven days have been required. In almost every case, the first indications of amendment have shown themselves on the second or third day; and, according to what has been observed, the order in which these manifest themselves is: 1, in diminution and entire relief from pain; 2,

in diminution of the salivation, and of sub-maxillary or parotidean swelling, when this is present; and 3, in the almost simultaneous disappearance of swelling of the gums, and a return to their natural color with the disappearance of ulceration where that has not existed previously to the stomatitis, in which case, of course, the chlorate of potass is ineffectual.

The increase of the dose does not seem to add to the rapidity of cure, except in very bad cases. In those of medium severity, the dose of three or four grammes is sufficient; and its administration in the form of a julep is preferable to all other modes.

When employed as a gargle, it seems very effectual in cases where the symptoms are exclusively local, such as in mere swelling of the tissue of the gums, their discoloration, ulceration, etc.

Its action appears to be entirely localized to the mouth, as is evinced by its being found in the saliva, as well as its effects being exhibited in the mouth when administered internally; and it appears to act as a sort of specific against the effect of mercurial inflammation in this quarter. At the same time it does not interfere with the therapeutic action of this remedy.

Of nine cases of chronic gingivitis, eight of which were accompanied with alveolar suppuration, six cures were effected under its use; two cases were unsuccessfully treated in the same manner; and the one case, without suppuration, was cured only after a prolonged course of treatment.

In only one of these successfully treated cases of gingivitis was the remedy given internally. The cure was complete in twenty days, and the first symptoms of amelioration were manifested about the seventh day. In five other cases, in which the remedy was given internally, no effect was produced by it; but on being used as a gargle, its good effects were speedily apparent—four or five grammes at a time, used in this way, leading to recoveries in from three to eleven days.

The good effects of such treatment almost always begin to manifest themselves in these cases about the second day, and consist at first in a well marked improvement of color in the gums, the diminution or cessation of purulent discharges, and the relief of pain. Even in the most obstinate cases, the swelling, discoloration, and pain soon subside—the suppuration alone being difficult to deal with. And in every case the dental tissues themselves rapidly recover their normal whiteness, however much this may have been altered.

In conclusion, it may be remarked that the chlorate of soda very closely approximates in its qualities the chlorate of potass; its solubility is greater, and its taste less disagreeable. Both are therefore applicable and efficient remedies in acute ulcerous stomatitis.—*Gazette Médicale.*

4. *Treatment of Nervous Headache by the Hydrochlorate of Ammonia.* By Dr. A. BARRALIER.

The author recommends the hydrochlorate of ammonia as the best therapeutic agent in cases of nervous headache, and especially in idiopathic cephalalgia and migraine. For upwards of three years he has employed it with success 202 times out of 259. The salt is administered in the form of potion: distilled or mint water, 60 grammes; hydrochlorate of ammonia, 3 grammes; syrup of orange peel, 25 grammes; taken in three doses at half an hour's interval. These doses do not produce any evident physiological effects in the healthy condition; but, when administered during a paroxysm of nervous cephalalgia, their effect is manifested with great promptitude. Generally, after the first dose, the pain abates and the pulse rises, and a gentle perspiration relieves the dryness of the skin. The influence on the circulation is so great that the pulsations, which were under 50 during the paroxysm, rise above 70 after the first dose. The headache, which is calmed by the first dose, diminishes and entirely disappears during the second and third. An important circumstance is, that the sal-ammoniac does not develop its curative action except when the pain is at its height; at the commencement of an attack, the potion has only a slight effect, but when the sufferings of the patient are very intense, the medicine acts with wonderful promptitude. Besides the temporary relief, it was observed that, in cases of headache returning in periodical paroxysms several times a month, the intervals gradually became longer, the attacks diminished in intensity, and ended by disappearing completely after having been several times arrested by the ammoniacal potion. To obtain success, however, it must be administered in certain cases, and according to precise indications. The results of the author's observations are that the potion of hydrochlorate of ammonia has almost constantly dispelled attacks of idiopathic hemicrania or migraine, and of migraine succeeding menstruation more abundant than usual. It has no effect in relieving attacks of hemicrania depending on irregular or suppressed menstruation;

it has given pretty good results in cranial pains depending on functional disorder of the stomach, and in accidental nervous cephalalgia; and it has been successful in relieving headaches consequent on repeated attacks of intermittent fever, those occurring in the decline of low fevers, and in the period of irritation in typhus.—*Bulletin Gen. de Thérapeutique.*

5. Case of Chorea cured by Arsenic.

M. Ernest Barthez communicated a case of chorea speedily cured by arsenic. A little girl of eight years old, previously quite healthy, was, after a violent fright, seized with involuntary movements, which first appeared in the hands. Six weeks afterwards she was admitted into the hospital Sainte-Eugénie. On enquiry, there appeared never to have been the slightest symptom of rheumatism; none of the child's relatives had been affected with any nervous diseases. The chorea was of a moderate degree of intensity. Movements of prehension and locomotion were irregular, involuntary, or ill-combined. Perfect immobility was impossible. There was neither anæsthesia nor paralysis, though she could not grasp for any length of time the hand when presented to her. On the 23d of March she was ordered the twelfth of a grain of arsenious acid, divided into three doses. Next day there was noticed a slight diminution in the movements. As the arsenic had been well borne, the quantity was raised to the sixth of a grain, to be taken in four doses. As this, however, caused vomiting after the fourth dose, the use of the arsenic was discontinued. On the 25th she was decidedly better; in walking, her feet were more firmly planted on the ground. On the 26th the use of the arsenic was renewed, the twelfth of a grain to be taken in three doses. On the 27th improvement was progressing; dose of arsenic was increased to the sixth of a grain. On the evening of the 28th, as there was some redness of surface and loss of appetite, the dose of arsenic was diminished, and on the 29th its use was discontinued. On the 5th of April the cure was complete.—*L'Union Médicale.*

[We certainly cannot approve of the large doses administered in this case; for, as will be observed, poisonous effects were very speedily developed. Smaller doses, continued perhaps somewhat longer, would no doubt have proved equally efficacious.]

6. *Willebrand on the Secale Cornutum in Disturbance of the Accommodation Power of the Eyes.*

When local hyperæmia is dependent upon a laxity of the walls of the blood vessels, advantage attends, Professor Willebrand of Helsingfors states, the employment of *secale cornutum*. He was induced to use it in these cases by the expectation that a means which acts so specifically upon the unstriated uterine muscular fibre must excite some power over the analogous structure of the arteries, and which its hæmostatic action proves, in fact, that it does. During his investigations he soon became struck with the fact that the heart of persons employing it soon underwent contraction in all its dimensions, and that even within the first twenty-four hours—a circumstance which he has frequently verified since. The first case that came under his care was an example of exophthalmos, accompanied with enlargement of the thyroid gland and hypertrophy of the heart. After a few weeks' use of the *secale* the hypertrophy of the heart and thyroid, as well as the projection of the eye, much diminished. The patient, however, left off the medicine, and the exophthalmos returned worse than ever. Since that period he has employed the *secale* in various cases in which increasing the contractility of the muscles of the blood vessels or other tissues seemed to be indicated. It was found of especial advantage in a disturbed state of the accommodation power of the eye, especially induced by overtaxing the organ on small objects with an insufficient amount of light. Children from some of the schools have furnished the author with many instances, and they have always been relieved by the *secale*. He relates a case in which impaired vision was always brought on by sewing or reading, and wherein the signs of some amount of chronic congestion were visible. Relief rapidly followed, and when the affection recurred some months after, it was as speedily relieved. He has also found the *secale* of great use in several cases of acute or chronic inflammation of the eye, and especially in blepharitis and the pustular conjunctivitis of children, the case proving much more rapid, and relapse being much less rare, than when local means alone are relied upon. No benefit has been derived from it in granular conjunctivitis and trachoma.

Proceeding upon the theory of its stimulant action upon the vaso-motoric nerves, the author has extended the employment of the *secale* to other local disturbances of the

economy; and, as already observed, he has had frequent occasions of observing its transitory influence in hypertrophy of the heart, without having any reason to believe that it is of any permanent utility in affections of this organ, the heart always returning to its former size soon after the use of the secale has ceased. In many cases of both chronic and acute hyperæmia it has proved of great service, and especially in cases of galactorrhea, and in indurations, tumefactions, and catarrhal affections of the uterus. Also, it has been very useful in enlarged spleen from intermittent fever, and when large doses of quinine have failed. It is especially indicated in the cases of relapsing intermittent depending upon enlarged spleen. In erysipelatous affections, it has often done good service applied externally as a cataplasm. The author formerly gave ten grains *ter die*, but now gives but five, combining it with magnesia, or, when chlorosis is present, with iron.—*Brit. and For. Med. Chirurgical Review*—(From *Graefe's Arch. für Ophthalmologie*.)

6. *A New Disinfectant.*

At the meeting of the Academy of Sciences of Paris, of the 18th July (*Gazette Hebdom.* July 29), MM. Demeaux and Corne, two former internes of the Hospice de la Charité, made a report on a new disinfectant, which, if all that is claimed for it is true, is destined to effect a great amelioration in the treatment of ulcers, abscesses, flesh wounds, etc. The object of the discovery is the complete and instantaneous disinfection of animal matter. They claim that it arrests decomposition, and effectually prevents the generation of insects. The following is the formula given by the inventors:

Plaster of commerce, reduced to a fine powder, 100 parts.
Coal tar, one to three parts.

The mixture of the two substances is effected with ease by the aid of a mortar, or any other appropriate mechanical means. The mode of application is the following: A certain quantity of the powder is diluted with olive oil to the consistency of paste, or ointment, which is of a dark brown color, has a slightly bituminous odor, and may be kept in a closed jar for an indefinite period. The oil unites the powder without dissolving it, and the composition has the property of absorbing infectious liquids the instant it is applied to the sore which produces them. The application may be mediate or immediate. In the latter case no pain whatever

is produced; on the contrary, the salve has a detersive action, cleanses the sore, and favors cicatrization. MM. Corne and Demeaux state that the composition may be applied in the form of a poultice, or on cotton, and laid on the wound. They demonstrate that their mode of dressing possesses the double property of disinfecting morbid products, and of absorbing their liquids. The last circumstance entirely obviates the necessity of lint, which is an important feature of the discovery. The communication was referred to MM. Chevreul, Velpeau and J. Cloquet.

At the meeting of the 25th of July, M. Velpeau made a report of his experience with the new disinfectant, during the short time that had elapsed. He was quite favorably impressed with it, having applied it to several cases in which the discharges from ulcers or wounds were highly offensive, with the effect of immediately correcting the odor, and improving the appearance of the wounds. The testimony of others was also given in favor of the new disinfectant.

At the succeeding meeting of the Academy (August 8), the subject was again brought up, and a report read from Baron Larrey, surgeon in chief to the army of Italy, who had a trial made of the new disinfectant, and who reports favorably in regard to it. It would seem to be worthy of the attention of the profession of this country.

8. *The Action and Uses of Digitaline.*

MM. Homolle and Quevenne have stated, as the result of their experience, that in doses of one seventy-fifth of a grain, given three times a day, this substance acts as a diuretic in general dropsy, and with great speed and efficacy in reducing the effusion; and that it is not rendered more certain by any material increase of the dose. They further found that, in about double this dose, and sometimes in the same dose, it reduces greatly the frequency of the heart's action; and that the dose cannot reach the one-twelfth of a grain without producing nausea and symptoms of incipient poisoning. Dr. Christison, in the *Monthly Journal of Medical Science*, Jan. 1855, gives us the result of his experience of its use. He believes it to be an energetic diuretic and sedative. His first two trials of it were made in cases of extensive renal anasarca. In one case, diuresis commenced towards the close of the second day, and in the other a day later; in both the flow was profuse, and the œdema entirely disappeared. He commends strongly the use of such diuretics as digitalis,

squill, and bitartrate of potash, in renal dropsy. He has not found them, except in one instance, increase the albumen in the urine; and believes they have been shunned on grounds purely theoretical and baseless. It is the same with digitaline. In the first of the two patients, the albumen quickly and greatly diminished; in both it disappeared at last, but in one, after some days, reappeared, but in diminished proportion. In one instance, great depression of the heart's action was brought on, instead of a flow of urine. He thinks it very likely that diuretic and sedative actions do not concur. He gives it in the doses recommended by Homolle and Quevenne.—*Association Med. Journal*.

9. Presence of Albuminuria in Croup, and its Prognostic Value.

Dr. Sée, physician of the Children's hospital, has recently demonstrated that the urine of all of his little patients who were attacked with diphtheritis (angine couenneuse), or with croup, contained albumen. This fact is an additional proof of the infectious nature of diphtheritis. The most important instruction derived from these researches is that the disappearance of the albumen always coincides with the amelioration of the disease; as soon as the cure is effected the albumen is no longer to be found. This is then a most important prognostic sign, and well worthy of interest to the practitioner. Messrs. Bouchut and Empis, who have tested this point, state that they found albumen in the urine only eleven times out of fifteen experiments. Even this figure proves the importance of M. Sée's statement.

[Translated from the *Bulletin de Thérapeutique*.

10. Medical Excerpts.

Assafoetida and aloes in ascarides.—Dr. Daniel Smith states that during a practice of more than forty years he has never known assafoetida and aloes to fail of an immediate cure. He has usually employed the tincture, sometimes clearing out the bowels first by a smart purgative.

Carbonate of ammonia in measles.—Dr. S. N. Pierce, of Cedar Falls, Iowa, in a communication to the Boston Medical and Surgical Journal, says he has used carbonate of ammonia with complete success in measles. He states:

For about two months past, this disease has prevailed

quite extensively in this vicinity, and in a very severe form. In nearly every case that I have been called upon to attend, I have prescribed the carbonate of ammonia, and in every case where this has been given, the disease has come to a speedy and favorable termination. The medicine should always be given early in the disease, before the eruption appears; or if not, immediately upon its making its appearance.

My usual prescription is: *R* Ammoniae carb., $\mathfrak{z}\text{i}$; aquæ camph., $\mathfrak{z}\text{iss}$. *M.* Dose, a teaspoonful three times a day, varying the dose according to the age of the patient and other circumstances.

Cholera in England.—The cholera is again here, and it has arrived by the old route from Hamburg. One case proved fatal last week on board one of the Hamburg steamers on her passage; another was sent to the Dreadnought and died there, also from a Hamburg vessel; and a third died in a Hamburg vessel on the Thames. Dr. McWilliam, who is doing duty temporarily for Sir Wm. Pym, the superintendent general of quarantine, has done all that he is empowered to do by having vessels from Hamburg boarded at Gravesend, and suspicious cases of disease removed to the Dreadnought, or elsewhere, and similar instructions have been sent to our eastern and northeastern ports; but beyond this the privy council will not act. The mischief is probably done by this time, and we are not likely to escape an autumn epidemic of cholera; but we have a strong conviction that it would be well to keep all vessels arriving in England from Hamburg, or from any port infected with cholera, under observation for at least three days before admitting their passengers to land in this country. This could lead to no very great inconvenience or loss, and it would surely be better to err on the side of excessive caution than of culpable neglect.—*Med. Times & Gazette.*

Inhalation of chloroform in hysteria.—Dr. Briquet, in a paper on hysterical convulsions, in the Archives Générales de Médecine, recommends the inhalation of chloroform during the paroxysm, a treatment which he has scarcely known to fail.

He says that hysterical patients are so susceptible to the influence of this agent, that a very small quantity is sufficient to produce sleep; while their convulsive state gives them a muscular power and a vital force which entirely protects them from the accidents which sometimes result from

the administration of chloroform to debilitated subjects; neither convulsions, coma, somnolence nor syncope are noticed. The small number of subjects who do not yield to this mode of treatment are those who are physically very powerful, who are of a sanguine temperament, and whose attacks are very violent.

In those cases in which the hysterical paroxysm is preceded by pain in the limbs or trunk, the topical application of chloroform often relieves the pain, and prevents the convulsions to which the latter gives rise.

Poisonous effects of belladonna used externally.—A lady, aged about 43, suffering from severe pain in the hypogastric region, was ordered to apply the following liniment twice a day: Camphorated oil of henbane 30, and extract of belladonna, 4 parts. Forty-eight hours after commencing its use she was seized with delirium. The pupils became dilated, and there were irregular movements, lipothymia, redness of the face, and a fixed stare. Sinapisms were applied to the feet, acidulated drinks were administered, and a bleeding was about to be performed, when abundant menstrual discharge came on, anticipating the proper epoch by 10 or 12 days. The symptoms of poisoning gradually disappeared.

Saline injections in diphtheritis.—M. Roche states that he has been so successful in some cases in which he has tried the injection of a solution of chloride of sodium into the throat, that in his next case he is disposed to employ it as the sole means of treatment. He practices, in fact, a continuous, or almost continuous irrigation of the throat, by means of Eguisier's irrigator, provided with a canula having a very small jet. He believes that it is in such irrigations, whether employing salt, alum, or the chlorates, we should seek for curative agents.—*Union Méd.*

SURGICAL PATHOLOGY AND OPERATIONS.

1. *Mammoth Tumor.*

In the second number of the Cleveland Medical Gazette, we find a description, by Dr. John Delamater, professor of midwifery and diseases of women and children in Cleveland

medical college, of the most enormous tumor, we suppose, on record—its weight having been about twice that of the sufferer who bore it. A daguerreotype likeness of the patient, taken several years ago, during her lifetime, is in the cabinet of the Boston society for medical improvement, and the rude wood cut, representing the tumor, at the head of the article in the *Gazette*, is probably copied from it.

The patient, a married woman, between thirty and forty years of age, residing at Pennfield, Lorain county, Ohio, received an injury in the right iliac region, by the kick of a cow, when she was in the sixth month of pregnancy, in 1838, to which she always referred as the cause of all her troubles. She carried her child to the full period, and was confined without accident. In 1840 she was confined a second time, but six weeks previously, having strained herself by lifting a heavy kettle, a small tumor protruded from the vagina. After an abortion in 1841, she again became pregnant, and was delivered, at full term, of a dead child. The tumor had now become enlarged, and offered an obstruction to the labor. It afterwards became gangrenous, and finally sloughed away entirely. Soon after, a soft, immovable tumor was discovered a little to the right of the linea alba, and filling almost the entire right side of the abdomen. Four years after this, another tumor made its appearance near the right labium, extending to the nates. These tumors grew rapidly, and both were repeatedly tapped; no fluid, however, having been obtained. At this time, when she was in a sitting posture, which she still sometimes attempted, the abdominal tumor rested upon her thighs to her knees; while the tumor of the hip was fifteen inches in length, ten inches in diameter at the largest point, and four inches in diameter at the point of its connection with the perineo-ischiatic region. Under such extraordinary circumstances, she again became pregnant, for the fifth and last time. Labor occurred in 1848; it was greatly embarrassed and retarded, and was finally terminated by artificial means, the fœtus, though mature and well developed, having perished in the process of the labor.

In 1850 the patient's weight was 269 lbs. Her greatest weight when in health, previous to her marriage, was 108 lbs.; and as her flesh was at this time greatly reduced, the weight of her person was estimated at 90 lbs., leaving 179 lbs. for that of the tumors. In June 1851 the measurements of the tumors were as follows: from sternum to apex of the tumor of the hip, three feet, nine inches; circumference around the abdomen, seven feet, eight inches; circum-

ference in long diameter of the tumor of the hip, four feet; circumference of the neck of the tumor of the hip, two feet, two inches; length of the tumor of the hip, two feet, six inches; short diameter of the same, eighteen inches; length of the anterior convexity of the abdomen, from the ensiform cartilage to the pubes, three feet, six inches.

The patient died in January 1854. A partial examination only could be made after death, but it was ascertained that the tumors were of a fatty nature, containing cysts communicating with each other and with the peritoneum. The smallest tumor was separated from the body, and was so bulky as to fill a common wash tub. The patient was attended by Drs. Philip Johnson Buckner, Charles H. Beach, D. I. Jones and J. W. Smith. For the last four or five years of her life she was rigorously confined to her bed, being wholly unable to sustain, for a moment, the standing posture. During the greater part of the time, however, her appetite and digestion were good, and all her functions were well performed. Her circulation was normal, and even her respiration, in her unavoidable state of quietude, seemed free from suffering or embarrassment of any kind, and the expression of her countenance was animated and cheerful.

Boston Journal.

2. *Recto-vesical Lithotomy.*

This operation was recently performed by Dr. Bauer, of Brooklyn, with the most marked success. The patient was a man aged 26. The operation was performed, on the 18th of July, as follows:

The patient, not using an anæsthetic, was placed upon his left side, with his legs crossed and drawn up; the bladder being injected, Sims' speculum was introduced into the rectum, and held firmly backward and upward, freely exposing the region of the base of the bladder; the left forefinger being placed upon the posterior margin of the middle of the prostate gland, a small two-edged scalpel was introduced on its median line through the rectum into the bladder; the wound was sufficient to admit the left forefinger; hemorrhage slight; the stone not appearing in the escaping fluid, a pair of straight forceps was introduced, the stone seized and removed without difficulty. Its diameters, in inches, were $2\frac{1}{2}$, $1\frac{1}{2}$ and 1; weight $1\frac{1}{2}$ oz. The wound was closed by Dr. Sims with the silver suture, the catheter being retained. Convalescence proceeded without an unfavorable symptom,

and on the 7th day after the operation the sutures were removed, and the wound found to be perfectly united. A new era dawns upon the operation of lithotomy!

3. *Elastic Tubes instead of Tents.*

The use of small india-rubber tubes (tubes de drainage of the French) instead of lint tents after opening abscesses, etc., has not yet become nearly so general as it well deserves to be. They serve an admirable purpose, and do not irritate in the least. They are much easier to get in than lint or cotton wool; and when once in, instead of closing up the aperture, enable the matter to drain away as fast as secreted, and thus allow the sides of the cavity to remain in contact, with a good chance of speedy coalescence. In the treatment of post-mammary abscesses they are invaluable. Tubing of the size which is the most generally useful, may be had in the shops at a sixpence a yard. To remove the sulphur it should be washed in warm water with a little soda. Dr. Savage, Mr. Price, Mr. Spencer Wells, Mr. Bowman, Mr. De Morgan, and Mr. Henry have all employed these tubes for some two years past, and speak well of their utility. Their use has already become very general in the Paris hospitals.—*Med. Times and Gaz.*

4. *Removal of Rings from Swollen Fingers.* By E. GARRAWAY, ESQ.

The mode of proceeding is this: A reel of cotton is wound evenly round, beginning on the extremity of the finger and bringing each coil into close apposition with the preceding, until the ring is reached. A needle is then threaded with the cotton, and passed under the ring, and the thread is carefully unwound from the finger. The ring follows each coil as it is successively unrolled, and by almost imperceptible degrees is brought over the knuckle and removed. Care must be taken that the cotton is wound on evenly, particularly over the protuberant and swollen knuckle, or an entanglement will occur in the unwinding. A small curved needle will pass more rapidly under the ring than a straight one.—*British Med. Jour.*

5. Administration of Anæsthetics by Smoking Apparatus.

M. Delabarre, in a communication to the academy, states that he finds the safest and most agreeable way of administering ether or chloroform, or the two combined, is by a chibouk, having a double tube attached, by means of which any quantity of air desired may be admitted. The patient at first smokes air only until accustomed to the action, when the anæsthetic vapor is gradually admitted.—*Bull. de l'Acad.*

6. Tannin in Odontalgia.

M. Vellemsseus recommends that the small layer of indurated granular matter deposited through suppuration, should be gently scraped off from the roots of the affected teeth, and the mouth rinsed for some days by an emollient wash in order to dissipate any irritation. When this is subsided the tannin mixture, thus prepared, may be used: tannin 8, alcohol at 86° 120, tincture of benzoin 8, and essence of mint 2 parts. Dissolve and filter, and add a few drops to the water used to wash the mouth, two or three times a day. The wash must be continued some time after the cure seems completed; and under its influence the teeth become firm, suppuration disappears, and the gums resume their healthy condition.—*Gaz. des Hôp.*

7. Double Vagina and Os Uteri.

Dr. Stickel of St. Louis reports an interesting case, in which he found, during an examination, a double vagina and os uteri. The septum dividing the vagina was oblique in direction, in relation to the natural passage—commencing close to the clitoris on the right side, and stretching down to the centre of the labia on the left, forming a perfect partition through the whole length of the vagina; and at the termination of each passage was a perfect os uteri. The patient said she menstruated from each passage alternately, but never from both at the same time; but she did not say whether the alternation was regular. She had borne one child.

HYGIENE.

1. *Mortality.*

Life and labor.—The Sanitary Review for January has an article on the influence of various common occupations on health and life. The effects of sand paper making are illustrated as giving rise in the young to a modified phthisis, which is sometimes rapidly fatal. Walking stick making and hemp and flax dressing are described as exciting bronchitis and bronchorrœa. The Neapolitan hemp has also the peculiar property of producing a spasmodic paroxysmal attack like that produced by drying hay and by ipecacuan. Trimming manufacturers' work leads to bronchial mischief. Fur dyeing, by exposing the artisans to the fumes of nitrous acid and to the dust arising from dried sulphate of copper, specially leads to a number of serious evils, affecting the teeth, the digestion, and (worst of all) the organs of respiration. Cigar and snuff making, in the first instance, give rise to the peculiar toxical effects of tobacco, and afterwards to chest disorder, ending in chronic bronchial flux and inanition. The writer of this paper suggests that a parliamentary committee of enquiry should be organized to enquire into the subject of occupations and health. He concludes as follows:

"When we look at diseases as a whole, we stand amazed at the varieties of type which they assume. When we classify them into groups according to their causes, we stand equally amazed at finding to how very few groups all diseases may be reduced. We find all the disease causes out of the body and clothed in externals. Resolving the causes, there stand out some dozen poisons of communicable and reproductive power, improper dietary, variations of atmosphere, and occupations. Of all these, the last stands most invitingly for enquiry. The enquiry is of a kind to which the most rigid rules are applicable. Its results might be demonstrations, its suggested remedies simple certainties."

Sanitary Review—Br. and For. Med. Chir. Rev.

Mortality of England in 1856.—Of 390,506 deaths in the year, the causes were not specified at all in 4,666 cases, and 3,474 are simply tabulated as sudden deaths, all enquiries having failed to elicit further definite information. 94,407 of the whole number of deaths were those of infants under one year old.

The causes of death are arranged in a few classes with numerous subdivisions. 78,047 of the deaths are classified as zymotic diseases: typhus (15,398), scarlatina (14,160), and diarrhoea (13,815), proving fatal in 43,373 instances, or considerably more than one-half of the whole number due to this class. Hooping-cough, measles and croup stand next in order. Small-pox, formerly so fatal, was the cause of death in 2,277 cases.

Of the class of diseases denominated "constitutional," 82,856 persons died. Phthisis (consumption) stands sadly pre-eminent in this list, its victims numbering 48,950 persons, by far the greater proportion of whom were young women. "How many of the thousands of deaths are to be ascribed severally to the fatal stays and to the indoor life of women, etc., it is not easy to calculate. Air is the pabulum of life, and the effects of a tight cord round the neck, and of tight lacing round the waist, differ only in degree in the time of their manifestation and in some of their symptoms; for the strangulations are both fatal. To wear tight laced stays is, in many cases, to wither, to waste, and to die, and is perhaps the natural chastisement of the folly which inflicts this Chinese deformity, natural only to wasps and other insects, on the human figure." The tubercular diseases carried off in all 63,832 persons.

The "local diseases," as inflammations, the allied pathological phenomena or their results, and functional diseases of particular organs, proved fatal to 149,911 persons. 50,535 of these died of diseases of the brain and nervous system, including also 23,946 deaths by convulsions. 13,672 deaths were referred to diseases of the organs of circulation. Diseases of the respiratory organs proved fatal to 52,905 persons, 21,528 of whom died from bronchitis, and 22,653 by pneumonia. These diseases, and all others of the class, were less fatal than in the previous year. 22,620 persons died from diseases of the digestive organs. The other causes of death under this heading are numerous, but the cases are few in each.—*Condensed from the Registrar General's Annual Report.*

2. *Royal Medical and Chirurgical Society. Tuesday, May 10th, 1859. F. C. SKEY, Esq., F. R. S., President, in the Chair. Practical Deductions from an Experimental Enquiry into the Influence of Food. By E. SMITH, M. D., L. L. B.*

The author, in some preliminary remarks, referred to the large amount of vital action which is necessary to maintain

life, and mentioned the various circumstances which he had noted during the continuance of a prolonged fast. He stated that the practice of administering arrow-root, or other fashionable foods, consisting of starch, with water, under the impression that it was more nutritious and easier of assimilation than wheat flour, was indefensible, since it did not sustain the vital action to a degree capable of maintaining life; and that nature has not provided starch, as food, altogether apart from nitrogenous substances. He contrasted the action (or rather want of action) of starch with that of the cereals, and showed that the latter is nearly as great as that of any substances with which we are acquainted. He drew the distinction between an action which increases the existing amount of vital force, and that which only tends to prevent loss of vital power—two circumstances which, in practice, are commonly confounded; and showed that beef tea, wines and brandy, can act only in the latter mode, whilst the cereals act in the first named manner. Hence, in cases of prolonged exhaustion, where there has long been more waste than supply, the former is not sufficient, and it is essential that the cereals be added or substituted.

The action of milk is exceedingly analogous to that of the cereals, both in extent and duration; and the combination of the two appeared to be the most perfect kind of food. The casein is to the milk what gluten is to bread; and the oil in milk is associated with substances (respiratory excitants) which call it into action in a manner quite analogous to the common combination of bread and butter, or of a mixture of fat and lean flesh. He showed that milk and flesh are the best and most natural modes of exhibiting fat, and altogether preferable to the administration of separated oils. He referred to the frequent use of skimmed milk in Germany as a medicinal agent, and of sour milk in Greece and America as a part of food; and explained the action of the former by its casein and sugar as respiratory excitants, and that of the latter by the advantage of administering lactic and other acids in that combination in the summer season, and at other times when the blood, by tending to undue alkalinity, is less capable of carrying on the oxygenating process. He showed that, in fevers, skimmed milk is preferable to new milk.

As fats lessen the respiratory changes, they ought to be, and are, combined with other articles of food which increase them. He referred to the importance of determining the reasons for the administration of both fat and starch, and showed that there is less difference in the relative amount of these

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two substances used in different climates, than has been commonly believed. He attached importance to the physical properties of fat, and explained the beneficial action of that substance when applied to the skin by its power to retard the conversion of the fluid perspiration into vapor, and thereby to lessen the waste of heat by the skin. He thought this latter mode of employment of fat to be especially fitted for cases of debility with lessened appetite and perspiring soft skin, in whom the waste is always greater than the supply.

The beneficial action of sugar was insisted upon; and the love of the French for sugar and water was explained by the refreshing coolness, the innocuousness and the agreeable flavor of the fresh made beverage, and the great freedom and lightness of respiration which attends its action. He thought the ill effects of sugar in the healthy system had been exaggerated.

The action of animal substances in increasing the respiratory process, in addition to the supply of plastic materials, was dwelt upon, and shown to be of great value to the system. These are allied to gluten, and some of them probably act as ferments; and, in illustration, he especially cited cheese, which promotes digestion if taken in small quantity, but is apt to disturb it if much is eaten.

Tea was shown to cause increased waste, and to excite every function of the body; and hence was well fitted to cases where there was a superfluity of material in the system, or where we otherwise desire to induce a temporary increase in the vital action; but is injurious to those who are under fed, or in any case where there is greater waste than supply; and, in illustration, cited the increase in the loss of weight of the prisoners at Wakefield, when tea was added to their food. The action of tea had been hitherto misunderstood; but the sagacious observation of Liebig, as to its analogy with the active principle of the bile, was much commended. He recommended its use instead of spirituous liquors, by soldiers on march, or otherwise exposed for a lengthened period to great heat; since by its powerful influence in increasing respiration and the action of the skin, without increasing pulsation, it was particularly fitted to counteract the influence of heat in its tendency to induce "heat-apoplexy," or, as more suitably termed by Mr. Longmore, "heat-asphyxia." Twenty-five grains of tea, in a concentrated cold infusion, taken every hour or half hour, during exposure, would suffice. For similar reasons he urgently recommended it as an adjunct in the treatment

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of suspended animation, as from immersion. It has a rapid and accumulative action, so that small and repeated doses have much greater effect than large and isolated ones. It differs from coffee chiefly by increasing the action of the skin, and thereby tending to cool the body; and therefore the two substances are applicable to different conditions of the system. He thought that both, and particularly tea, ought to be more commonly used as medicinal agents. Coffee leaves he believed to be a valuable febrifuge medicine, and one particularly fitted for cases of nervous excitability.

The author then contrasted the effects of brandy and gin with tea, and showed that in all respects they were directly opposed; but coffee so far resembled them in action, that it lessened the action of the skin, and thereby lessened refrigeration. Rum and beer he regarded as restoratives, and the combination of rum and milk as the best restorative employed as food; whilst brandy and gin simply lessened waste. He regarded all alcohols as having their chief influence in sustaining the action of the heart; and recommended that they should be given in small quantities, and repeated every quarter or half hour in urgent cases, so as to accumulate their action, rather than allow reaction to follow each dose by permitting a long interval between the doses. He mentioned a case in which he gave six bottles of port wine in forty-eight hours, with the effect of saving the patient's life, and reducing the pulse from 150 to 90 per minute. He believed that alcohol increased the respiratory action indirectly through the nervous system; and that, in fine old wines and spirits, the action is lessened by the volatile elements, which have a conservative tendency. He particularly cited the conservative influence of fine old port wine, and the disturbing influence of new and inferior spirits. The primary and secondary action of all alcohols, when taken in an amount to affect the sensorium, was always felt; and the author described the attendant circumstances.

In conclusion, the author stated that dislikes for food are indicative of lessened action, and that other foods of analogous properties should be provided in such cases; and also that it was probable that at least some kinds of azotized substances are more fitted for the hot season, when the chemical changes are greatly reduced, than has been heretofore believed.

Dr. Stallard said, however valuable the facts stated by the author, they should, nevertheless, be received with a certain amount of caution, and that a wider view of the case

should be taken than that presented in the paper. The recommendation of bread, in preference to beef tea, seemed so opposed to the general experience of the profession, that it ought not to be received without further confirmation. Dr. Smith's experiments, however, were upon a very healthy person, and this possibly might make all the difference. Beef tea might be absorbed by the simple law of the percolation of fluids through membranes; but bread had to undergo a distinctly assimilative process, which in a weak patient might not be easily carried on. The author scarcely took into consideration the influence exerted by fat in the assimilation of non-nitrogenous as well as nitrogenous foods. It was possible that fat, instead of being assimilated, might pass out in the feces. With regard to tea, it no doubt produced a greatly increased respiratory action; but the question was whether the increase was temporary, or whether it had a permanent specific effect, due to the composition of the tea itself. It might possibly have an ultimate depressing effect. He enquired whether the author's experiments showed any increase of the vapor expired after the use of alcohol?

Dr. J. A. Wilson said that the paper was of such an unreasonable length, that it precluded any thing like an adequate discussion of its statements—an evil which, he said, was unfortunately growing upon the society. He agreed with the author's remarks as to the importance of fat in supplying loss by perspiration. Liebig's statements had led to the inference that fat was not used in warm countries; but in the course of Captain Sturt's journeys in the interior of Australia, where the heat in the deserts was most intense, he and his followers ate fat with the greatest avidity, their desire for it departing only when the heat subsided. Other instances of a similar kind had been recorded. The utility of casein to aid digestion had been long known, since Shakespeare made Ajax address Thersites, "Come my cheese, my digestion." (A laugh.)

Dr. Smith, in reply, stated that when he recommended the use of starchy food and milk, instead of or in addition to beef tea and brandy in cases of exhaustion, he was desirous to urge the distinction between food which can alone supply material to meet waste and that which simply tends to lessen the rate of the wasting process. Fat when taken alone lessens the evolution of carbonic acid, and when taken with the cereals it also somewhat lessens (instead of increasing) their action on the same function. The action of tea is temporary; but if food is duly supplied to meet the in-

creased waste, tea does not cause a subsequent decline of action. Inhalation of alcohol increases the amount of vapor exhaled by the lungs, probably from some local action; but when it is taken into the stomach, the doses taken by the author did not produce a very decided effect; but this subject was only incidentally examined in the present series of experiments. Casein, known as a digester, was proved to act in common with other nitrogenous substances to promote the transformation of starch and fat, or at least the evolution of carbonic acid from whatever source.

British Medical Journal.

BIBLIOGRAPHICAL RECORD.

- I. *Anatomy, Descriptive and Surgical.* By HENRY GRAY, Lecturer on Anatomy, St. George's Hospital. First American Edition. Published by Blanchard & Lea. Philadelphia. 1859. (Received of Geo. M. West.)

THIRTY years ago, such a work as the one now lying before us, with all its beauty of finish, its clear, polished paper and bold yet not hard type, its numerous illustrations and (most important) its moderate price, would have thrown the medical student of that day into a transport of pleasure. Such a thing as an anatomical atlas was almost unknown, or at least required an expenditure of one hundred dollars. Old Albinus indeed might be found in the larger libraries, and still later, the expensive plates of Lizars could be purchased at considerable cost—but none of these approached in convenience or accuracy the elegant treatise of Mr. Gray, now offered by the American publishers, at a greatly reduced price, to the public.

This work is strictly to be regarded as intended for students and general practitioners. Although entitled *Descriptive and Surgical*, yet so much space was required for the subject, even when confined closely to its most technical de-

partments, that there is not much room for the important and practical division of the science denominated as regional or surgical anatomy. Still less are we to expect in such a work, elaborate descriptions of comparative, general or microscopic anatomy. Any attempt at these topics would have more than doubled the volume, already reaching to seven hundred pages.

What the work is designed to fulfill, is successfully accomplished. The student is furnished in one volume with an accurate system of plates, each one lettered and described in a manner entirely novel—every muscle, nerve and artery *labelled* and distinctly defined, and accompanied with letter text amply descriptive of each plate. These delineations are drawn from recent dissections, and cannot be too much admired. We would especially mention the admirable sketches of the ligamentous structures, as being superior to any thing of the sort ever published.

II. *The Physician's Visiting List for 1860.* Philadelphia. Published by LINDSAY & BLAKISTON. (Received from the Publishers.)

MODESTY forbids our supposing that the worthy publishers of this little book, hearing of our vastly growing business, have kindly sent us a *double paged copy* of their Visiting List. At least, such is the fact, and we heartily thank them for the delicate compliment, and more for the useful present.

III. *Urinary Deposits—Their Diagnosis, &c. &c.* By GOLDING BIRD, M. D., F. R. S. Edited by Edmund Birkett, M. D. New American, from the Fifth London Edition. Philadelphia. Published by Blanchard & Lea. 1859. (Received from A. Morris.)

WHY praise Golding Bird and his book? Has it not become the *classic* on that subject—and is not *he* mourned in

England and America as one snatched away too soon from fame and usefulness.

And yet there is room for commendation in this the recent edition of this valuable production. The editor (Mr. Birkett) has not failed in his important duty, and has added a large amount of recent material, industriously collected from many sources. The able aid of Hassall, Letheby, Lehmann and others has succeeded in bringing the present edition of the work completely down to the present day.

Few of our readers are (or at least ought to be) ignorant of the original text. The lamented author has made a lasting impression upon the profession of two continents, and it is a graceful and noble offering to his genius thus to perfect and revive his best production.

IV. *Woman and her Diseases. A Series of Letters to his Class.* By Professor CHARLES D. MEIGS of the Jefferson School. Philadelphia. Published by Blanchard & Lea. 1859. Fourth Edition. (Received from Geo. M. West.)

LONG ago, we expressed our opinion frankly about this book; brilliant, though exaggerated, full of ripe experience and fanciful conceits; as interesting as it is affected. The public laughs while it reads, and many who sneer at its style, live to confess their debt of gratitude due for its many valuable and instructive teachings.

This work has reached its fourth edition, partly indeed because, as professor in the largest college in this country, he thus succeeds in making a steady sale of this book, but mainly, we confess, because his fluent, original manner induces those to study who probably would fail to attempt the more common place efforts of others, more learned and orthodox. Such works fulfill a valuable purpose, however, and deserve our gratitude—somewhat after the fashion of the Pictorial Alphabet, which encourages the dunce to learn his hitherto neglected letters.

- V. *The Elements of Medicine. A Compendious View of Pathology and Therapeutics.* By SAMUEL HENRY DICKSON, M. D., Professor of Practice of Medicine, Jefferson Medical College. Philadelphia. Published by Blanchard & Lea. 1859. (Received from A. Morris.)

THE second edition of Professor Dickson's Treatise on the principles of medicine, finds its author lecturing to a class of more than five hundred students, who all are glad to become purchasers of his literary efforts. Nor do we think their money wasted; for while we would not compare the work with the more compact and thorough production of Dr. Williams, yet it has over its English rival, some advantages, the most important being that it gives us views of pathology and therapeutics taken from our own climate and population, many of them being original with ourselves and not known to our brethren of the other side.

Dr. Dickson has a very sonorous and easy style—diffuse, but elegant and dignified. His work deserves to be ranked as among the best of the American contributions to medical science.

- VI. *Manual of Elementary Chemistry.* By GEO. FOWNES, F. R. S. New Edition. Edited by ROB'T BRIDGES, M. D. Philadelphia. Published by Blanchard & Lea. 1859. (Received of Geo. M. West.)

THE best (we think) of the English manuals of chemistry, this little book has long held its own, midst the constantly increasing aspirants for public favor.

The present edition (the seventh) is well posted in the additions and improvements of modern chemistry. Its author (now dead for some years) still lives through the affectionate labors of his friends, who would not willingly see his memory fade away. There is no better compendium of the subject, and we have no doubt that it will receive a rapid sale.

EDITORIAL AND MISCELLANEOUS.

THERE is no better evidence of progress in medical science, than to see a simultaneous movement of all parties interested, upwards and forwards; the public demanding a higher standard, and even *discriminating* between mediocrity and merit; the schools, with one accord, enlarging and perfecting their course of study, lengthening the term and increasing the number of teachers, and lastly, the students themselves pressing on to a higher mark, striving not for a quick and shallow term of study, but willing to delay their progress, and prepare with time and care a solid and lasting professional education.

We gladly claim for the profession in America these cheering marks of advance and progress. Look where you will, and you behold the colleges of the country vying with each other in their inducements to students, encouraging them by preliminary and special courses (often without charge); by prizes to the best students—and in every possible way encouraging their classes to greater exertions and longer terms of study. Hardly as they have been abused by certain shallow-pated *reformers*, who insanely attempted to perform impossibilities, we yet believe that the professors of our medical colleges are honestly striving and faithfully laboring in behalf of our true interests, and deserve the hearty support of the great mass of the profession.

The long suffering public (with pleasure we record it) at last begins to be heard on this point. Once, with rarely more than one physician to each neighborhood, when competition was feeble, a doctor was the same thing every where. Nobody criticised his practice, or could by comparison ascertain his merits or faults—but now the crowd of aspirants presses closely on all sides. Every county

court-house has three or more doctors. They all strive manfully for public patronage; meanwhile the community looks on with a critic's eye, and eventually makes a selection.

Ah, says our reader, but does the public *choose* the best prepared man, the hardest student, the learned votary of science? or rather he whose popular manner and easy, pleasant way of mingling amongst them, wins for his claims a favorable consideration.

True, friend, true—and the reason is easily explained—if you are at all experienced in the general practice. Medical knowledge is *not* the only learning necessary to make a good general practitioner. The art of cure is not a science to be found in books alone. To study human nature as we find it, to know the world and its ways, to discriminate between habit and disease, between fancy and fact—in short, to know mankind, is at least as essential to a physician as to know his books or be learned in the microscope.

Thus it is that the popular man who is a favorite because he knows the community around him, their likes and dislikes, their virtues and failings, succeeds in distancing his retiring and possibly more learned competitor. He has qualifications which the other has not, essential to the successful prosecution of his calling—but let him beware how he presumes to push his ignorance too far forward—for presently and *inevitably* it will peep out, and the broad, full glare of ephemeral popularity will only hasten his well deserved and ignominious fall.

Cease, then, the complaint against the public, who assign as their reason for sending for their doctor, that “they like him; he comes to see them familiarly, plays with the children, and talks with the servants.” By so doing, he only makes his services more valuable, and prepares himself at all points for his attack on disease and suffering. How safely he feels as he enters the sick room, knowing beforehand the peculiarities, idiosyncrasies, habits of life and thought of his patient, and he can then prescribe with confidence in the result.

Let us seek to perfect ourselves in all knowledge, and be ready to afford our patrons every resource and every comfort. The advances in medicine and surgery ever increasing, require that we should always be students—but to render our bright and glorious armor truly effective, we must learn how to wield them most skillfully. Tact, discretion and common sense give to our weapons certainty of direction, and the battle, which is often lost through awkwardness and diffidence, will, under their guidance, close with a brilliant victory.

Employment of Ether instead of Chloroform in France.

THE merits of ether in preference to chloroform as an anæsthetic agent are slowly gaining ground in the estimation of the medical public, and the time will surely come when the latter drug will be almost wholly abandoned. It is unsafe, in the most careful and most experienced hands. Again and again have efforts been made to explain the mysterious deaths occurring during its inhalation. By some, the impurity of the article is held responsible; others speak of spasm of the lung, congestion of the lung, syncope, obstruction of the glottis by the tongue, fatty degeneration of the heart, and other hypotheses. But however difficult it be to account for the death, the fact itself is plain enough, and the number of cases has now become alarmingly great. They can be counted by hundreds. Now, so far as we are aware, *not a single death has ever occurred in consequence of the inhalation of ether*; and when we consider how often this drug has been inhaled by incompetent and even ignorant persons, the fact is certainly very remarkable, though not more so than the obstinate persistence of surgeons in employing so dangerous an agent, when an equally efficacious and far more safe one is at hand.

We publish, to-day, a translation of an article from the *Gazette Médicale* of Lyons, in France, upon this subject, called forth by a recent discussion of the comparative merits of the two substances as anæsthetics, in the Imperial medical society of that city. We doubt not it will be read with interest, and we trust it will be read with profit by many who are in the habit of using chloroform. The flimsy re-

plies to the able argument of M. Hervey de Chégoin, in the *Société de Chirurgie*, will strike the reader with astonishment. Is it possible that mere convenience of administration can for a moment weigh against the danger of instant death? for, after all, this is the only real advantage which chloroform possesses over ether. The reply of the editor of the *Lyons Gazette Médicale* is conclusive to those who maintain that the most perfect anæsthesia cannot be produced from ether; ether has been exclusively employed, with perfect success, in every case in which complete insensibility and muscular relaxation was required, in that city, for the past eight years. We may add, that the same is true of Boston for a longer period. Except for a short time, ether is the only anæsthetic which has been used in Boston ever since the first memorable demonstration of its effects in the Massachusetts general hospital.

We wish to say a few words about the alleged effect of the inhalation of ether in giving rise to erotic ideas, especially in females. We believe that this effect, always rare, occurs no more frequently with this agent than with chloroform. We have administered it to a great many women, as well as men, but we have never seen any evidence which would lead us to believe that such results are produced by it. We know that these effects have been occasionally observed by others, but we believe that they are quite as often caused by chloroform. The case of Dr. Beale of Philadelphia, who was tried, and most unjustly convicted of the rape of a young woman who was under the influence of chloroform, undoubtedly furnishes an example of this. It will be recollected that the patient was menstruating at the time, and was shortly to have been married. She testified that the dentist committed a rape upon her, while she was under the influence of chloroform, in the operating chair. No evidence other than the statement of the plaintiff, was introduced to prove that any rape had been committed, and the circumstances were such that a nominal sentence was pronounced, and the prisoner shortly afterward was pardoned.

The only objection which can be urged against ether as an anæsthetic, is its inflammability. In cases of surgical operations about the mouth, in which the actual cautery may be required, it might become dangerous, and under such circumstances it might be justifiable to employ chloroform. The same remark will apply to operations about the head when it becomes necessary to operate by candle light—as in croup, for instance. With these exceptions, ether answers every purpose which can be fulfilled by chloroform;

and we reiterate our firm conviction that its safety will ultimately give it the preference over the latter agent, in every part of the world.—*Boston Med. & Surg. Jour.*

Fighting on an Empty Stomach.

THE Times correspondent says : “ Finally, as to the condition of the Austrian soldier going into battle. There is no doubt that an ill fed army does not fight so well as one which freely partakes of food. Now, the Austrian army is an ill fed army. The rations of a soldier in Italy consisted of one-half pound of beef and a proportional quantity of bread. Neither wine, nor spirits, nor coffee, are part of the bill of fare. If the Austrian soldier wants more than his ration, he buys it. This is a fruitful source of disorder. On a march the soldier falls out of his rank to buy cheese or bacon. He must run to resume his place, and he eats in the ranks. He is obliged so to satisfy his appetite and quench his thirst, because the regulation is that he shall cook but once a day. In time of peace the meal is cooked and served at a regular hour. In time of war, on a march for instance, the cooking takes place in the evening, after the bivouac is prepared. The meal having been eaten, the soldier lies down, and is not entitled to another for 24 hours. The result of this at Solferino, has already been mentioned. The soldiers ate their dinner on the evening of the 23d, and were not entitled to another until the evening of the 24th. In the meanwhile a battle was to be fought on an empty stomach.”

The above may be in accordance with military gastronomics, but we venture the opinion that in civil life the reverse holds good, and that to civilians, an empty stomach is sufficient *casus belli*, and an excuse for general exasperation and bellicose feelings. The experience of our readers probably is, that a full meal tends rather to amiability and a dozy tranquillity, than to fighting inclinations.

The first Napoleon remarked that “ the strength of an army is in its legs;” the third Napoleon locates it in the stomach, so the latter keeps his men well fed.

VARIETIES.

Medical News and Items.

DRESS OF PHYSICIANS.—We are bound to declare, and do so with infinite pleasure, that the members of the medical profession are, take them all in all, patterns of neatness and accuracy in their dress. They are ten times better clad than the clergy, who in Scotland, at least, exhibit an almost superstitious reverence for the precept of taking no thought as to their raiment. They are more scrupulous in their attire than the lawyers. . . . A sloven by the side of a sick bed looks like the forerunner of Azrael; whereas a well-dressed, trim and gentlemanly medico, entering the chamber like a sunbeam, carries with him a mesmeric influence, which, better than pill or potion, allays the fever of the patient. In the days of Abernethy, roughness was considered a medical virtue; courtesy was branded as hypocrisy. Poets, who have shown themselves from the beginning of time the best judges of propriety, invariably represent eminent medical men as patterns of mundane neatness. Podalirius and Machaon—physicians both—are the only men noticed in the Iliad who inspire us with the idea of uniform tidiness, and strict propriety of apparel. Throughout the Trojan war they dressed like gentlemen, maintained the dignity of the order, and doubtless, as they were not salaried, picked up an infinity of fees, to which they were justly entitled.—*Blackwood*.

HEALTH OF THE AFRICAN EXPLORERS.—Communications received from Captains Burton and Speke, on lake Njiji, give a deplorable account of the sanitary difficulties of the exploration of Central Africa. The climate was terribly unhealthy, and they had been greatly affected by the attacks of poisonous insects. Captain Burton had been stung in the ear by a small insect, from the effects of which he suffered most severely; and from that cause, combined with climate fever, he had been affected with blindness and deafness, and was almost incapacitated from continuing his journey, being obliged to be carried. Captain Speke had suffered almost to the same extent. The last accounts of Dr. Livingstone are more cheerful; the general health of the party was good, a daily use of quinine having warded off the pernicious fevers of the country. Captains Burton and Speke confirm Dr. Livingstone's discovery of the existence of an extensive plateau of water in Central Africa, which tends to show that the "mountains of the moon" are, in fact, all moonshine, and must be expunged from our charts.—*Lancet*.

CURES ANNOUNCED TO THE FRENCH ACADEMY.—Dr. Jacquot has cured, and promptly, a most serious case of peritonitis by hot starch poultices. Dr. Dalfraygrè finds in inveterate cases of ague the simultaneous administration of sulphate of quinine by the mouth and per anum very efficacious. And surgeons will be charmed to hear that Dr. Fournier has invented a new method of treating strictures. Dr. Gandriot has also found out a new thing, viz: how to cure a serious affection which particularly belongs to soldiers; but what the disease and the remedy are, he at present conceals under a sealed envelope.

VIRGINIA MEDICAL JOURNAL.

NOVEMBER AND DECEMBER, 1859.

ART. I.—*How to Get a Practice.* A Valedictory. Delivered to the Graduating Class of 1859. By JAMES B. McCaw, M. D., Professor of Chemistry in the Medical College of Virginia.

THE occasion which brings us here to-night is one of grave interest, and, with many of those present, this feeling is of a personal character: the members of the Graduating Class, now about to take the first step in life; their friends and relatives, who are here to wish them God-speed; and the Faculty of this Institution, who look with affection and pride upon their pupils.

But discarding any *individual* interests which here exist, such times as these arouse, in the bosom of every one, those emotions belonging to our nature, and attract the attention of *all* who claim with us a common humanity.

Even when the inanimate rock becomes the corner-stone of the future monument, or when the ship makes its first graceful bound on the bosom of its future home, admiring crowds gaze on the spectacle, and attach to these lifeless objects a personal identity.

How much more then do we feel with those who are now laying the first stone of their future career, who, to-night, begin the pursuit which is to occupy their coming years?

Though all before us is gay, and inspiring music tends to cheerfulness, yet there is something sad and solemn in such a scene. There are responsibilities and trials to be borne; disappointments and dangers which assuredly must come.

We can all recollect when the country called her young men to war, and the streets were filled with volunteers for Mexico. Did we not, while the drums were beating and the trumpets sounding, reach forward in thought, and anticipate the time when weary fragments of that ardent band would return, and sadly think of those who would never come again?

So here, to-night, such thoughts *will* rise, and we cannot repress them.

That was a fearful day, "when into the jaws of death rode the six hundred," though the sun glanced brightly on plume and helmet, and horses bounded forward, while the armies of three empires looked on with admiration. Shall it be compared with the long, long days, when, with calm and steady courage, our brethren stood the onset of an invisible foe, and fought a hopeless fight for the cause of humanity?

Poets will tell in spirit-stirring strains of the charge at Balaklava, but who sings a mournful requiem over the forty martyrs of Norfolk?

On the banks of the beautiful Rhine, away in the heart of the German country, travelers tell us of that ancient city, where rest the bodies of three Eastern kings, who, with offerings of frankincense and myrrh, made their pilgrimage to the manger of Bethlehem.

From the mouldering bones of these perfume-loving worthies, now springs a perpetual fountain of fragrance, and innumerable Jean Farinas distribute, throughout the world, the far-famed *Eau de Cologne*.

Christendom has not neglected the remains of the pilgrims; for, wander where you may, a nobler tomb than theirs cannot be discovered.

Its foundations were deeply laid more than 1400 years

ago. The offerings and tributes of a hundred generations have aided in its erection. Tower and buttress, chancel and nave, pillar and portico, have united to assume a wondrous proportion. Even in our day, the great work still goes on; for, with all its grandeur, the *Cathedral of Cologne* is yet incomplete. The tooth of Time eats upon its ancient walls, but the workman's clinking hammer carves the imperishable stone into a new and beautiful structure.

Ever perfect, never finished—it stands alone, unapproachable—an architectural epic—a magnificent anthem, whose deep, though silent symphonies, in voiceless music, ever sound the praises of the great Creator.

Gentlemen of the Graduating Class, you become to-night the priests and ministers of a temple, the embodiment of man's intellect, worthy to be compared with this, the noblest evidence of his skill.

The Temple of Medicine, how ancient are *its* foundations, away back among the misty traditions of the pagan mythology—the earliest records of the earth's history—back to the days when Esculapius sailed with the Argonauts, and Machaon and Podalirius carried their thirty ships to the siege of Troy.

Immovable it stands—resting upon *Anatomy*, as its foundation. Have we not searched every cranny of the human body? every twig of vein and nerve? Searched with knife, peered with microscope, and analysed every tissue, until the “human frame divine” is revealed to us in all its perfection?

Age after age of the earth's greatest scholars have built up the superstructure. Physiology and Pathology, two noble towers, unfinished, yet how beautiful! The Practice of *Medicine* and the brilliant achievements of *Surgery* adding more and more to its symmetry, and the last and greatest addition, the labor of modern days, we hear the ring of the *Chemist's* chisel, as he piles up, higher and higher, the splendid steeple which almost reaches the skies.

Yes, Gentlemen, we may truly say, that the *Medical Sciences* are the grandest results of man's intellect.—Human Anatomy and Physiology led to Comparative Anatomy—to

Natural History and the laws governing the animal and vegetable creation.

The old doctor wandered through the woods in search of herbs to cure the sick. *He* founded the science of *Botany*. The Alchemist sought in his laboratory for the Elixir of life; and out of the ashes of past superstitions has sprung into existence *Chemistry*, with its attendant satellites, the arts and sciences of modern times; the steamboat and rail car; the balloon; the telegraph, and, most wonderful of all—*Ether* and *Chloroform*.

You have chosen, then, a noble pursuit—one of elevating tendencies, of inestimable privileges. To-night, in the first blush of your well-won honors, 'tis well to comfort yourself with inspiring reflections; to nerve the heart for coming trials; *for they will soon be here*. Your greatest trouble, indeed, is now at hand. It stands just outside of this hall, where we have studied together. Before you sleep to-night—before the music, the congratulations have faded from hearing—it will mock you, and whisper into your ear the startling question, *Where are your patients?*

Dear friends, this first and inevitable trouble is hard to bear. You leave us armed, ready for the field, bearing the banner of your Alma Mater, to seek reputation and honor. Like the knight companions of old, you wander over the country in search of occupation. *How long you will wait!* The road is crowded; regulars, irregulars and many defectives. The public looks shyly at you; some dislike your appearance; some your manners. "Nobody but their own doctor understands *their* constitutions." Then, too, how difficult to do yourself justice—to put yourself right before the profession and public.

You see a prospect of success—"an opening;" but when you get there it is closed, hermetically sealed, with some broad-shouldered old doctor, who has not the most remote idea of dying. Hopeless, desponding, you appeal to your friends. They tell you, *Wait for a practice*. Your father says, *Wait*, my son, and you *will* get a practice. Your pre-

ceptor answers, *Wait as I did*, and you will have a practice. There *may* be some dear girl, more to you than all besides; but, alas! she, too, tells you, *We must wait until you get a practice*.

Maddened, with hope deferred, I see you coming back to this your starting point, and, with outstretched hands and eager gestures, appealing to those who directed your student-life: Friends, friends, teach me the most *important of all knowledge*—HOW TO GET A PRACTICE?

In the attempt to impart this information, I must ask your indulgence, if I should not afford you entire satisfaction; for it cannot be denied that the subject is difficult to treat. Indeed, if I could point out such principles of action as would insure success, the hall would require to be enlarged in all its dimensions, to accommodate the crowd who would rush here to study this necessary branch of professional knowledge.

The difficulties of the undertaking are greater, because this useful art has been sedulously cultivated for many years, and by some has been carried to great perfection, and yet its principles have never been written down, and put into a scientific form. It has been rather regarded, as what the lawyers term, the *lex non scripta*, that unwritten law to be learned by intuition. Still, by appealing to the traditions of our calling, and carefully consulting such authorities as are reliable, I shall hope to aid you in prosecuting the inquiry.*

While presenting, however, the views of those who have studied the various ways of getting a practice, I shall take the liberty of adding my own experience on those points, when there may be room for an honest difference of opinion.

* For fuller details on these important points, we refer to the erudite article on Medical Ethics, by PHILO ETHICUS, Artium Majester, with notes and additions by PHILADELPHICUS, Surgeon to the Asylum for Wooden-legged Seamen, &c., &c., to be found in the Virginia Medical Journal, vol. vii. p. 253. From this valuable source, many of the maxims in this address were derived.—ED.

One of the greatest authorities on this important branch of *Medical Ethics* was the celebrated *Dr. Richard Meade*, who flourished in London more than a hundred years ago, and after enjoying a reputation beyond any of his cotemporaries, in the fashionable world at least, has left behind him, in a series of letters, the embodied results of his experience. In hastily glancing over his instructions to his pupil, *Dr. Timothy Van Bustle*, it will be at once perceived how permanent has been his influence upon the profession; for we may recognize many of his best manœuvres in constant use at the present day.

Meade was the pupil and afterwards the rival of the celebrated *Radcliffe*, with whom he formed an admirable contrast, and, as these ancient worthies present us with excellent types of their class, I shall introduce them more particularly to your notice.

When Meade was about to commence his career in London, Radcliffe said to him: "Meade, there is no reason why we should interfere with each other. I *bully* all *my* patients; you must *wheedle* yours."

The apt scholar took him at his word, and, from that day to this, the two roads to success have been followed by their disciples; for while some of the most distinguished names in medicine have blustered themselves into fame, the larger proportion, imitating the safer example of their great leader, have depended on good manners and an insinuating address to take them on to reputation and fortune.

These two methods are based upon a close study of *Human Nature*. There are many who, like the parasitic vines, love to cling to the gnarled and stubborn oak, rather than to depend upon themselves in times of trouble. With these, the Radcliffes, Cheynes and Abernethies found themselves omnipotent. Still, it must be confessed, that the *suaviter in modo* has been, on the whole, more productive of good results. Most people preferring to be coaxed, rather than driven.

Whether, however, gentlemen, you choose one school or the other, there are certain *maxims* common to both, strenuously

insisted on by all my authorities. I can only allude to a few of the most familiar, leaving you to give to each one its proper value.

Meade was one of the first to introduce the custom of having himself *called out of church*; but he practiced this ruse under peculiar advantages. His father was a clergyman, with a large congregation, and, when the doctor was summoned out, would say, "Dear brethren, let us offer a prayer for the poor sufferer to whose relief my son has been called." In this way, the doctor soon gained a great notoriety.

As you, my friends, will not enjoy this peculiar advantage, and as the trick has no longer the merit of novelty, I would advise you not to follow this maxim, or even the more modern practice of coming in at the commencement of the *sermon*. If you had a consultation at 11 o'clock on Sunday morning, would you not *always* be punctual to the appointment? Why not be at least as prompt when you visit God's house, and seek forgiveness for your many misdeeds.

Another precept, handed down to us from old times, is the plan of riding or driving about the town at all hours, and in great haste, inducing the belief that your services are anxiously sought for by the public. Said Meade to his pupil Timothy, "Whenever you visit a *poor patient*, leave your horse at the door of some rich neighbor. You will be rewarded for the additional walk."

A friend of mine told me of a horse-trick which was quite ingenious. The animal would always break his bridle and dashing through the town, everybody would run out to stop Dr. *NonPater's* horse. Thus the public became aware of the existence of that *soon to be distinguished* individual.

A method of tactics much above these paltry artifices, is worthy of mention,—I mean to *write yourself into notice*. There is a wonderful power in printer's ink, and when you can get into the newspapers, your fortune is made. An operation reported in the local columns—a dreadful accident quickly relieved by that *eminent* physician, Dr. Izard, looks well. Meantime my authorities lay much stress on the importance of writ-

ing often in the *Medical Journals*. Get up a long list of cases. The disease must be desperate though common, as the cholera or yellow fever. Sum up the results of your practice after this fashion :

100 cases of cholera treated in the — month of year —. Of these, 97 were discharged *cured* ; 2 relapsed through their own *imprudence*, and 1 *absented* himself.

A good notion, says Meade, is to write about the last new remedy, or better yet, invent one yourself, to cure some *incurable* disease. The public wonder ; admire your daring and sound your praises.

When you report cases, take care that you give *no names*. *That* is very unprofessional. But say : The Right Rev. Dr. — ; Judge — of the Court of Appeals ; and acknowledge nothing so low as a member of Congress.

But the last and greatest *maxim*, most extolled by the text books of the art, is yet to be mentioned, "*Learn* how to praise *yourself* and at the same time run down your *neighbor*." This requires the highest refinements of the science and all the resources of the most profound *tact*.

It will never do to flatter yourself grossly or to abuse your rival openly. This would disgust the patient, and might result in disagreeable consequences. But, with shrugs, looks and innuendoes, a well-timed prescription and a lucky recovery, a dexterous tactician, especially if supported by a few gossiping tongues, must be very awkward, if he does not succeed in his object. He has then reached the *highest pinnacle of his art*.

These are some of the methods adopted by many to gain the ear of the public, and reach success in the profession. What say *you*, young gentlemen, to these *maxims in Medicine* ? handed down to us for centuries ; practiced every day in our own midst. Will you make them *your* guide in the coming future ? No—No. Rather, this night, tear up in shreds the hardy earned parchment which only leads you into the crooked paths of fraud and artifice. Throw to the winds your long-

cherished ambition, and seek with honest hearts and honest consciences a more humble occupation ;

“For if the purchase cost so dear a price,
As soothing folly or exalting vice,
Then teach *us*, Heaven, to *scorn* the guilty bays.
Drive from my heart that wretched lust of praise ;
Unblemished, let me live or die unknown,
Grant me an *honest* fame or grant me none.”

The question, gentlemen, you have proposed, is not yet answered. You scorn at the first glance, the traditions and maxims ; the schemes and tricks of a base profession. Such practices may, with the old and hardened *wordling*, be received with a laugh, or admired for their ingenuity ; but can get no favor from the fresh and youthful heart. I know, in these latter days, it is common to look at such questions from a low point of view ; in these days of an advanced civilization, which some regard as a more refined *selfishness* ; in these days of an interested morality, when the child is taught “honesty, *because* it is the best policy.” Even yet, believe one who is many years in advance of you on the voyage of life—believe me, the world is not yet so steeped in selfishness as to despise honesty and frankness ; human nature is not so base as to feed *always* on fraud and hypocrisy.

The way to get a practice is plainly marked out before you, and success in your profession is within the reach of every one, who from this night forward determines, *come what may*, to strive earnestly and conscientiously to *do his duty*. It may be a slow process—it *will* be a tedious, thorny road, and even when gained, the success will assuredly fall short of your youthful aspirations. Yet come it will ; and when you have reached the long coveted prize, the greatest element in your cup of joy will be the reflection, that you have honorably struggled in the fight with the world, and may proudly wear the trophies you have worthily won.

Success in the practice of Medicine will come to every man who devotes himself to its duties with undivided energies and

a hopeful, zealous spirit. With these impelling motives, there is nothing more needed, save the requisite qualifications for usefulness, and the rest is but a question of *time*.

To make yourselves *useful* as physicians, to render yourselves *worthy* of public confidence, is the true object then of your future life. Nor is this so difficult a task. Each one of you, in his own sphere and after his own way, can effect this result. The labors and responsibilities of a physician do not demand rare abilities, exalted genius. An average intellect and a good perception are the necessary elements of a medical mind. In short, any one can succeed in doing good service in our art, who secures to himself two leading qualifications—a *good head* and a *good heart*.

You have recently proved, young gentlemen, during your connection with this Institution, and by the creditable examination just concluded, that you have a fair proportion of intelligence, which, if cultivated, will enable you to appreciate the leading principles of the science. But the expression includes much more than this. You must have a good head for *observing* as well as for acquiring. There is no occupation demanding a more constant use of the perceptive faculties than ours. It is through the power of observation that we reduce *theory* to *practice*, transfer science to the bed-side, and turn our knowledge to a useful purpose.

The most important attribute of the *great* physician is his rapidity and accuracy of observation. Yet this he is required to guard cautiously by the exercise of a sound discretion. In a science like ours, confessedly imperfect, admitting of many constructions and differences of opinion, though we should be quick to observe, yet be *slow to act*; for the calm and sober second thought often marks the point where lies the truth.

Another important element in the medical man is a good common sense, and an accurate knowledge of *human nature*. Look at your patient with the *naked eye*, before you put on your scientific spectacles. Study him as a *man*, before you consider him as a patient. What is his character, his disposition, his temperament? What are his habits, his modes of

thought, and how shall I bring to light the difficulties lying at the root of this medical problem?

In the exercise of a justifiable medical *tact*, in a quick appreciation of character, and in the constant appeal to common sense, unprejudiced by foregone conclusions, whether drawn from books or the results of experience, modern physicians stand far above their predecessors. The mind, freed from the routine of the schools, and permitted to reflect, observe and act for itself, has sprung forward with velocity in the search after the truth. Even the heresies of the age may be made useful by a discriminating common sense. Homeopathy and Hydro-pathy have at least taught us to beware of *too much* physic and *too little* water.

Such is my definition of a good medical head. Add to these qualities, if you choose—they may all be yours; add to these, an honest, true and conscientious heart, and your question is answered. You can do *nothing* without that. You may put learning to learning—you may walk the hospital, study disease at the bedside, and read the human heart—you may win a great name in the profession, and adorn with new discoveries the noble art; but, without a *good heart*, you will never fill up the full measure of your usefulness—the trusted physician, the sympathizing *friend*, the never failing support of those with whom your duties lie.

And who have such noble opportunities of cultivating the higher moral qualities? How easy this tender culture to *you*, young men, now going into this sphere of action, with fresh and ardent emotions, ready to soften under every impression; to sympathize with every cry of sorrow? I need not deny in the name of our brotherhood the charge often made, that physicians become hardened to the pains and weaknesses of suffering humanity. Indeed, it is just the reverse. It is our sad duty to witness so much of sickness, misfortune and *vice*, that the heart, under this incessant teaching, becomes more and more impressible. Long practice has learned us to preserve a calm and necessary composure when the eye of the frightened invalid is watching; or harder still, when a mother's

glance searches us, looks for a ray of hope, a word of comfort; hope which has fled, comfort we cannot give. Still, there is something *tugging* at the heart strings, which the world does not appreciate, and from its deepest depths we feel the impotency of our calling.

You *must* have a *good* heart. You would not be worthy to associate so freely, so intimately with pure and loving woman, with angel children, unless your hearts were also pure. Constant association with the other sex is the great humanizing agent of modern civilization, and *blessed* privilege is ours to spend our lives in their presence and companionship. We see them in their most endearing aspect, their supremest loveliness—unselfish—self-sacrificing, by many a sick bed, (sometimes of God's making, but how often of *man's* transgression,) or themselves bearing patiently the tortures of disease—

Blest partner of our joys and woes
Even in the darkest hour of earthly ill
Untarnished yet, thy fond affection glows,
Throbs with each pulse, and *beats* with every thrill.

You must have a good heart, or you will never hold that place in *children's* affections which the physician in every family should seek to obtain. Children are intuitive judges of character. No miser who loves to count his gold, can tell the *counterfeit* from the true metal more certainly, than does the child discern between the gloss of an artificial manner, and the genuine ring of an honest sympathy. You must seek to win their love and confidence. The little ones learn to come without fear, and obey from a feeling of affection. 'Tis only thus that you will exert over them a truly curative influence. The *doctor's* coming will no longer be an event to be dreaded, but a time of joy. How easy, then, to study the disease or condition of these little patients, who, instead of cowering in the nurse's arms, trembling with terror as you approach, will fondly sit upon your knee and *trust* you with all a child's affection.

Lastly, gentlemen, in your intercourse with your brethren, you should study, by a frank and genuine politeness, a tender,

scrupulous respect for their opinions and feelings, and an earnest desire to do full justice to all with whom you may be associated, to awake in the bosom of every one a perfect and unshaken confidence in your honor and integrity. In every noble ambition, while you strive to rise to professional eminence, may you not, instead of pulling your comrade down, rather lend him a helping hand? Then standing together on that high platform only gained by honorable men, how strong will be the united influence of a united brotherhood against the jeers of the ignorant or the attacks of the charlatan.

Are there many before you in the race? still be faithful to the duties of your own sphere, and prove, by patient and cheerful labor, that you deserve a higher place. Preserve with watchfulness the *discipline* of the profession, its rules and customs, and though the trial may be long and hard to bear—for so it *will* be—and the temptation to work on a *little* faster, may be almost irresistible, never forget (to quote an eminent and witty brother*)—never forget, that the tenth commandment was intended especially for doctors: Thou shalt *not* covet thy neighbor's *patients*.

The duty assigned me by my colleagues is now completed; the relations existing between us as teacher and pupil are forever closed. The time has come when we must part—when we must say, Farewell.

The *morning* of life is yours. The sun of youthful hope is shining brightly and gilds the coming future with many a vivid picture of joy and beauty. The days of *manhood* are at hand, with a mingled web of dark and bright. But come what may, never forget that we shall watch your career with deep interest and an abiding confidence. Be true to yourselves, to the College you represent, to the profession, to those who ask your assistance—keep your heads clear, your hearts

* See Address to the Harvard Medical Class. By OLIVER WENDELL HOLMES.

sound, and with zeal and industry *persevere to the end*, and take my word for it, an honorable name, the respect of the public and the approbation of your own conscience will be surely yours. Farewell.

ART. II.—*The Per-Sulphate of Iron as a Hemostatic*, with Cases. Reported by A. E. PETICOLAS, M. D., Professor of Anatomy, Medical College of Virginia.

IN the year 1852, M. Monsel, now Pharmacien Major in the French service, then attached to the medical corps of the French army at Rome, discovered and made known in a published letter, the hemostatic properties of the above named salt. Subsequent experiments made by M. Poggiale at Val de Gras, fully supported the assertions of Monsel. The subjects of these experiments were rabbits and dogs, in whom the hemorrhage from wounds, involving in some cases large blood vessels, was rapidly checked. For some unknown reason, the properties of this salt have, until quite recently, not attracted the attention of the profession in this country. While on a visit to New York some months since, the writer saw two or three cases of varicose veins under the care of Dr. James Munroe Minor, of the Brooklyn City Hospital, which had been successfully treated by injecting the veins at different points with the Liquor Ferri Per-Sulphatis made according to Monsel's formula. He also heard enough in casual conversation with several medical gentlemen to satisfy him of the value of this agent as an astringent hemostatic. Samples prepared by Messrs. Meade & Baker, and Mr. H. Blair, druggists of this city, have since been used here with satisfactory results. The writer first used a solution of $\mathfrak{z}\text{ij}$ of the liquor to $\mathfrak{z}\text{iv}$ of water as a vaginal injection in persistent menorrhagia which had resisted both local and general remedies, and had seriously com-

promised the strength of the patient. This success induced him to suggest its trial to several friends, more especially in cases requiring a powerful hemostatic, and all of those, who have had the opportunity to judge, testify in its favor.

The following notes from Dr. Mason, resident physician to the College Infirmary, indicate its value—and others, from different sources, might be added :

Extracts from Infirmary Reports. By EDMUNDS MASON, M. D.

I. *Case of Osteosarcoma of lower jaw*, removed by Dr. Gibson, Oct. 19th, 1859. In this case the right half of the lower jaw was removed. Hemorrhage profuse, but completely controlled by sponge saturated with Liq: Ferri Per-Sulphas. No sloughing ensued in consequence of the styptic. Was discharged cured, Nov. 5th, 1859.

II. *Case of Glandular Tumor, just behind the right angle of lower jaw*, removed by Dr. Gibson about the 12th of Oct., 1859. In this case the hemorrhage was arrested in the same manner as above stated.

III. *Case of Hypertrophied Clitoris*, removed by Dr. Gibson, about the 20th of Oct., in which all hemorrhage was arrested by means of the Liq: Ferri Per-Sulphas.

IV. *Case of Varicose Veins*, (Boy Ned,) operated on by Dr. A. E. Peticolas, Oct. 29th, 1859. The Liq: Ferri Per-Sulphas was introduced into the veins by means of a small syringe made for the purpose, and in a few minutes the blood was coagulated. No evil effects resulted from the styptic; but owing to imprudence on part of the patient an ulcer has been established at one of the points injected. The operation so far is successful.

The specimens used differed somewhat in appearance, and were most probably manufactured from different formulas, although their power appeared equal. The preparation made according to the subjoined or Monsel's formula, as given by Mr. Wm. Proctor, junior, seemed best adapted to the treatment

of varicose veins, from the fact that it produced least effect upon the metallic nozzle of the syringe:

“Take of distilled water, ℥iij.

Sulphuric Acid, ℥iij, (troy.)

Proto Sulphate of Iron, ℥xxv, (troy.)

Nitric Acid 35° B, ℥iv, (troy.)

Add the sulphuric acid to the water in a porcelain capsule and heat it to boiling; powder the sulphate of iron, and add one-half of it to the acidulated water; when dissolved, pour in the nitric acid little by little. When the red fumes cease to be developed, add the remainder of the sulphate of iron and stir with a glass rod till dissolved and the effervescence ceases. Continue the heat until the solution, which is at first dark colored, has become reddish-brown, and measures three fluid ounces and three fluid drachms. The nitric acid must not exceed 35° B.”

ART. III.—*Operation for Cataract.* By SAMUEL MEREDITH,
M. D., Fincastle, Virginia.

In the latter part of August, I was requested by my respected partner, Dr. Williams, to operate in a case of Double Capsulo-Lenticular Cataract, to which his attention had been called. The complete success of the operation of division, but once done in this case, makes it worthy of notice.

The subject, A. R——, a young man about 30 years of age, and of previous good health, had been disqualified for manual labor some years ago by an accident which occasioned the loss of an arm. He then gave his attention to teaching in a small country school. After pursuing this avocation for some length of time, he found his sight beginning to fail in the left eye. This continued until the middle of the year 1857, when he became totally blind in that eye and perceived also that vision was somewhat impaired in the other. When I saw him for

the first time, he stated, in reply to my inquiry, that he had been able only to "tell day from night" for 9 or 10 months. His condition was pitiable indeed—his spirits broken, and his health impaired by confinement and the want of exercise.

After the usual preparatory treatment, I proceeded on the 1st of September—assisted by Dr. Williams—to operate upon both eyes at the same time, using my right hand for the left eye, and the left hand for the right eye, having determined to do the operation of Division if the cataract proved soft, as seemed probable, or Depression if hard.

Placing the patient on a chair in a good light, the pupil being well dilated with belladonna—and seating myself before him in another, I made the usual sclerotic puncture with the curved spear-pointed needle of Scarpa. Finding the cataract, which in each eye involved both the lens and its capsule, to be soft, I made the division—in disregard of good authority—as minute as possible, putting a number of fragments into the anterior chamber, and not withdrawing the needle until the patient complained considerably of pain and was threatened with syncope. The cataract was hardest and more difficult to divide in the right eye, where it was of more recent formation.

After the operation the patient was put to bed and cold applications made and continued for some time. The subsequent treatment consisted in the occasional administration of the comp. cathartic pill and the free use of the iodide of potassium to promote absorption. Very little disturbance followed the operation in one eye; but in the other, extensive and severe conjunctivitis, which, however, yielded in due time to free local depletion and the cautious use of astringents, in connection with the above treatment, which was continued for some time. Fortunately the inner structures of the organ did not participate in the inflammation.

I saw the patient—who lived in the country—occasionally, and, perceiving that absorption steadily progressed, was convinced after the expiration of three weeks that it would be unnecessary to repeat the operation. It is now two months since the operation was done. The man has been for some time

going about when he pleased, and is able comfortably to read, with the proper cataract lens of $2\frac{1}{2}$ inch focus, small print of the ordinary newspaper size. He told me to-day that he had last night *written a letter by candle-light*.

To a casual observer his eyes seem perfectly natural, but upon careful inspection a trace of the lens, or probably the anterior capsule, may be perceived in the left eye. This, however, does not materially interfere with vision, and will doubtless finally disappear.

I attribute the complete restoration of sight in this case, after the one operation of division, mainly to the *perfect* laceration of the lens and its capsule. This course is not generally approved, but I scarcely think the danger from re-action greater after the complete than after the partial division; and certainly there is more probability of absorption when the vascular connection of the lens is thus entirely destroyed.

ART. IV.—*Reports of Cases Treated at the Infirmary of the Medical College of Virginia.* By EDMUNDS MASON, M. D., Resident Physician.

Case of Femoral Aneurism. Treated by Prof. A. E. PETTICOLAS.

CASE I.—George, black; æt. 55; abode, Spottsylvania co., Va.; employment, carpenter; previous health and habits, good; admitted, Aug. 18, 1859.

History.—About three years ago, the patient tells us, he observed a small tumor on the right thigh, from his description, near the point where the femoral artery passes through the opening in the adductor magnus muscle. This tumor was for some time uncared for. It gave him no pain, very little trouble, and thus was allowed to go on increasing in size daily, until about six weeks ago, when the tumor began to increase very rapidly, giving him a great deal of pain and uneasiness. During all this time his health had suffered much

from frequent attacks of intermittent fever. A physician was called in, and he pronounced the swelling "Aneurismal tumor." The cause of his disease was an unhealthy condition of the coats of the vessel.

On admission into the infirmary, his condition was critical—emaciation very great—unable to stand up even for a few minutes without fainting—pains of a darting character in the limb, which prevented sleep at night—scarcely any appetite. The arteries generally seemed to be diseased. The tumor was very large—measuring about six inches in diameter and nine inches in length. Aug. 24th, Dr. Peticolas cut down and tied the artery just above the lower angle of Scarpa's triangle. The coats of the artery were found in better condition than had been anticipated. The incision made was about an inch and a half in length. The wound having been dressed with adhesive straps, the whole leg was bandaged with cotton batting. Chloroform was administered in this case.

In four days the tumor had reduced one inch, and the patient seemed to feel better. Treatment:—Generous diet—Whiskey ʒij et Huxham's tr. bark ʒij ter in die. A few days after the operation the cotton batting was dispensed with and a simple bandage substituted. The ligature remained until the 15th of September, when it was taken away without danger. Pressure by means of adhesive straps caused the tumor to subside very much.

Oct. 19th.—Although the tumor had not subsided, yet the wound having healed and his condition being so far improved as to admit his taking gentle exercise, he was discharged.

Note.—When he was discharged no pulsation could be felt either in the popliteal or communicating artery.

CASE II.—*Case of Cancer of the Lip.* Operated on by Prof. CHAS. BELL GIBSON.

Mr. K——, æt. 62; abode, Prince George co., Va.; employment, cooper; previous health and habits, good; admitted, July 6th, 1859.

History and probable causes.—Several years ago, after a severe attack of fever, he had a “fever blister” on the lower lip, which, instead of healing as they usually do, degenerated into a sore. This sore, at first, was hard and painful; the discharge was thin and sanious, very offensive to smell. He was at length induced to try some kind of a paste, prepared by a quack, which caused his lip to become much worse—in his own words, it caused it to “bust” and spread very rapidly. Now, whether this disease was induced by the fever blister, or by the quack doctor, or by his short stem pipe, is the question to be decided in the reckoning of cause. The latter has been cited by our best authors, again and again, as the most common inducing cause; and guided by these lights, we are of the opinion, that in this man’s case the disease was induced by the irritating pipe stem resting constantly on his lip already sore, and was no doubt very much aggravated by the quack doctor’s salve.

When he presented himself at this infirmary, the whole lower lip was involved, leaving no hope of cure to the surgeon, short of a free use of the knife. The lower front teeth were all extracted three days previous to the operation.

July 12th.—The patient having been put under the influence of chloroform, incisions were made from the angles of the mouth vertically downwards beneath the chin for about one inch; a transverse incision was then made across the root of the lip, connecting the two vertical ones; the diseased portion was then entirely removed by a few strokes of the knife; another transverse incision was then made just below the apex of the chin, and not connecting the vertical incisions; the integuments intervening dissected up and by means of harelip sutures this lip was brought into the place of the old one. Strips of adhesive plaster were then applied and the patient put to bed with strict injunctions not to talk or try to eat solid food.

On the 15th of July, the needles were removed, and it was found that union had taken place—yet there were symptoms of sloughing, which did take place to some extent, limited however to the new prolabium on the left aspect.

The treatment consisted in local applications of solutions of sodæ chloride, zinci. act. et opii, and poultices of flaxseed meal. Under this treatment he improved gradually, and was discharged cured on the 30th of July.

It is proper to state, that after leaving the infirmary, his face was attacked by erysipelatous inflammation, produced probably by some imprudence in diet or exposure to the sun. Since then, however, we have heard that he is now perfectly well.

ART. V.—*Case of Pleurisy with Empyema*. By CHARLES A. GILBERT, Amherst county, Va.

THE following report, drawn up from memory, is not an exact daguerreotype of all the minutæ of the sick chamber, but is a correct summing up of the chief symptoms and treatment in the case, which I think has enough of interest to justify its publication:

On the 17th of January last, I was called to see Wm. S——, æt. 6 years; white; previous health, good. When I arrived, I learned that he had been ill for several days; and on instituting an examination, diagnosed pleurisy. I essayed the usual remedies. The attack was severe, and unusually protracted. Effusion took place, with great enlargement of the left side of the chest, visible to the eye, and ascertained by actual measurement; extensive dullness on percussion, and displacement of the heart beyond the right side of the sternum. The impulse of the heart was felt under and below the right nipple. Pulse exceedingly frequent, small and weak; respiration difficult, hurried, and increased in the recumbent position. There were hectic fever and night sweats, with œdema of the feet and ankles and of the left side of the chest.

After a short time, the effused liquid pointed between the sixth and seventh intercostal space anterior to the middle of the ribs, and also between the seventh and eighth intercostal space, two inches posterior to the first-named position. I could distinctly

and unequivocally detect fluctuation in these "huge abscesses," and laid them both open. A large quantity of sero-purulent matter escaped, with considerable relief to my patient. For several months he continued to discharge a vast amount of pus, during which time the treatment was tonic and supporting, with a nutritious diet. He improved slowly from a state of entire helplessness, hectic fever, night sweats and debility, pulse 160, respiration 70 per minute, until he was able to walk about and join his comrades. The heart still beat on the right side, the left shoulder was drawn down below the other, the left side flattened and sternum pressed over on the right. The left lung compressed, or perhaps bound down by false membranes, for all respiratory sounds, both normal and abnormal, were absent.

Such was his condition up to June last, when he was seized with pertussis, which prevailed extensively in this community. Instead of destroying him, as I feared, the paroxysms of coughing have expanded the lung, elevated the shoulder, and restored the flattened chest almost to its normal condition. The discharge has ceased, and his appetite and digestion are excellent. He has recovered from pertussis, gained flesh and strength, and although I do not regard him as hale, hearty and sound as he was previous to this severe and complicated illness, I can discover nothing in his condition now to prevent him from attaining his original degree of health and vigor. After effusion occurred, I employed means to produce absorption: calomel, ipecac., digitalis, squills, &c. variously combined; diuretics, and long and repeated counter-irritation. The question may be propounded, why I did not resort to paracentesis thoracis? and after the discharge of pus continued so long, why I did not employ antiseptic and stimulant injections into the thorax, for the purpose of exciting adhesive inflammation, and thus arresting this exhausting drain on the system? I opened the chest as soon as I was convinced that absorption could not take place. To excite inflammation of the pulmonary and costal pleuræ is, I imagine, no difficult matter in the case under consideration, and with tr. iodine, or other kindred

injections; but to limit inflammation of this character, and keep it within due bounds, is not so easily accomplished. It might have advanced a step farther than I designed, and caused the death of the patient. In addition to this, the little boy seemed to be doing very well, and I was disposed to let "well enough" alone.

ART. VI.—*Reports of Cases occurring in Bellevue Hospital, Richmond, Virginia, during the services of Drs. O. A. CRENSHAW and THOMAS POLLARD. Reported by C. W. P. BROCK, Resident Physician.*

CASE I.—Betsy, black, æt. 14; abode, Richmond, Va.; employment, house-maid; admitted, September 24th, 1859; disease, typhoid fever.

History.—She had been sick about 14 days when admitted, and previous to her admission had been blistered, from the effects of which there was a slough about as large as a quarter of a dollar, situated about two inches above the umbilicus, nearly upon the median line, and extending through the skin and external oblique muscle of the abdomen. She had pain over the whole abdomen, particularly acute in the right iliac region; some tympanitis; considerable diarrhœa; tongue furred and moist; gums stretched, and having a glazed appearance; skin hot, dry and harsh; pulse 130, and very weak and compressible; great tendency to sleep.

R—Ol. terebinth. gtts. x; tinct. opii, gtts. iij; every three hours, in sweetened mucilage. Milk toddy pro re nata. Diet—milk, chicken soup, &c.

Sept. 25th.—No better; has had milk toddy several times; pain over the abdomen, and tympanitis persistent; right half of tongue dry, dark-colored and harsh; other half furred and moist; dark sordes about the teeth and gums; head hot; diarrhœa somewhat checked; pulse 124, very weak and compress-

ible; urine scanty; drowsiness still *continues*. Continue the treatment; dress the ulcer upon the abdomen with pulv. Peruvian bark; sponge surface with vinegar and water.

26th.—No improvement; patient rested badly last night; a small quantity of toddy being required during the night; pulse 136; tongue moist; no sordes about the teeth and gums. Continue treatment; apply a large poultice over whole abdomen; give small quantity of milk toddy.

27th.—Condition not improved, except that the diarrhœa has been entirely checked; very great drowsiness; pulse 140, and extremely weak. R—Sweet spirits nitre, 3j; ol. terebinth. gtts. x; every two hours. Give toddy every three hours. Discontinue tinct. opii.

28th.—*Condition extremely critical*; pulse 150, and scarcely perceptible; involuntary discharges both of fæces and urine; tongue moist; feet cold; surface bathed in cold perspiration; Hippocratic face; cadaveric smell; pupils dilated; no power of deglutition; can't be roused; slipping down in bed, and picking at the clothing. Continue stimulants by the mouth, if possible; milk toddy and tinct. opii per rectum. This was not retained, from the complete relaxation of the spincter. In about two hours, the power of deglutition returned, when the former remedies were administered every hour or two during the night and succeeding day.

29th.—Much improved; takes stimulants and diet freely; drowsiness passing off; speaks when her attention is strongly fixed; has had some quiet sleep; pulse 140. Continue treatment, and watch the patient closely.

October 2d.—Condition still more favorable; some bronchial râle over the entire chest; pulse 128, and a little fuller. Continue treatment as heretofore, and rub the chest with croton oil, gtts. x, twice daily.

5th.—Not so well; growing weaker; diarrhœa has again appeared, with involuntary discharges; tongue moist, not having been dry but once or twice during her sickness, and then only remaining so for a short time; dark sordes about the teeth and gums. R—Camphor, grs. ij; ol. terebinth. gtts. x;

tinct. opii, gtt. vj; every two hours. Leave off nitre, and continue toddy every two hours.

October 6th.—Not so well as yesterday; considerable diarrhoea; passed a very restless night; pulse 145; mind wandering; tongue moist; tenacious secretion about the mouth. Continue same treatment, and increase the tinct. opii to gtt. xij, if restless. If bowels continue too loose, add plumbi acetat. to the ol. terebinth.

7th.—Patient's situation very precarious; pulse 152, very weak and compressible; rigid contraction of the muscles on the posterior portion of the neck; head and neck thrown back, indicating cerebral trouble about the base of the brain; involuntary discharges of urine, but none of fæces; picking at the bed-clothes; sudamina have appeared about her chest and neck; pain upon pressure over whole abdomen; ulcer looks healthy, but has not healed at all. Blister to nucha (4×6), extending up as high as the occipetal protuberance. Stimulate freely. R—Carb. ammonia, grs. v, every two hours, with the turpentine and camphor.

9th.—Some improvement; blister drawn well; irritation about the brain considerably relieved; tongue moist, and looks very well; profuse involuntary discharges of urine; heat of skin about natural, heretofore burning hot; sudamina over the entire body; bowels moved only once. Continue same treatment.

10th.—Appeared to be in a sinking condition last evening, but rallied again under the free use of stimulants; passed a very good night, and is this morning much better; has had a very healthy-looking passage; appetite improving; bed sores discovered over the lower part of sacrum and over each trochanter. Continue treatment. Apply poultice to bed sores, and place her upon an air pillow.

17th.—Improving; appetite good; rests well; slough separated from bed sores, which are very extensive, and accompanied by considerable discharge from them. Continue same treatment; allow generous and supporting diet as heretofore, and dress the bed sores with resin cerate.

20th.—Still improving, though not yet able to sit up. Continue former treatment, and give comp. tinct. bark three times daily.

29th.—Gradually convalescing; pulse still too frequent, from the irritation kept up by the bed sores; appetite good; sleep well at night; bowels regular, with healthy fæcal discharges; strength returning, and, without some unexpected complication, will soon be perfectly restored.

This case affords us another striking instance of the verity of that old maxim, "that as long as there is life, there is hope," which is peculiarly applicable to all cases of "typhoid fever."

CASE II.—*Services of Drs. THOMAS POLLARD and WM. W. PARKER.*

LEE, negro slave, æt. 17; admitted October 10, 1859; disease, congestive fever.

Lee had been employed as a "wood-chopper," in a miasmatic district, and the first symptoms of his attack were those of ordinary miasmatic fever, he having been seized with a paroxysm, apparently differing in no respect from that of a regular intermittent. In the second paroxysm, the congestive phenomena showed themselves; the surface was bathed in a profuse sweat, extremities cold, while the exterior of the chest was morbidly hot; tongue very little altered from its healthy state. There was a sensation of intense internal heat, with unquenchable thirst, the patient incessantly calling for "cold water," which was not rejected by the stomach, as is usually the case in attacks of this kind. Very little sensibility of the lower extremities. The respiration was anxious and laborious, with frequent sighing, articulation slow and drawling. The mind was dull and confused from the time of his admission to the hospital, and he gradually sank into low, muttering delirium, and then into complete stupor; the eyes heavy and dull; pulse small and frequent. In this condition he was brought in on the evening of the 10th of October, when the

following prescription was ordered, he having taken considerable amounts both of calomel and quinine, previous to his admission into the hospital. R—Sulph. quinine grs. vj; camph. grs. ij; pulv. capsicum grs ij; every 2 hours. Dry cups, and then a blister (4x6) to nucha. Hot bricks to feet. Hot toddy before the expected chill to-morrow, say from 7 to 8 A. M. Stimulants as indicated by the pulse and surface. Hydrarg. chlor. mite grs. xx, with the first dose of quinine, &c.

Notwithstanding the patient took in the interval, from 8 o'clock on the 10th, to 8 o'clock on the 11th, above 60 grs. of quinine, 40 grs. of calomel, and stimulants pro re nata, there was not at any time, a single symptom of re-action, and the case terminated fatally about 8 o'clock A. M. on the 11th.

Autopsy five hours after death.—The disease in this case seemed to be principally confined to the animal functions; and the brain as a natural consequence, was found in an altered condition. It was of its natural density, but considerably injected; there was deepened color of the cortical substance, serous effusion in the ventricles, undue fullness of the veins and great congestion about the base of the brain and medulla oblongata, and as far as we could observe, similar congestion about the spinal marrow. The mucous membrane of the stomach was soft, and could be scraped off. The liver, spleen, lungs and other portions of the body were perfectly healthy, having none of the peculiar alterations spoken of in the books.

TRANSLATIONS AND SELECTIONS.

- I. *The Correlation of Physical, Chemical and Vital Force, and the Conservation of Force in Vital Phenomena.* By JOSEPH LECONTE, Professor of Geol. and Chem. in the South Carolina College, Columbia. Read before the American Association for the Advancement of Science, at the Springfield Meeting, August, 1859.

MATTER constantly changes its *form*—but is itself indestructible except by the same power which called it into being. The same quantity of matter exists in the universe at all times. So also force changes its *form* constantly, but is itself indestructible, incapable of increase or diminution, and the same absolute amount of force exists in the universe at all times and forever. The mutual convertibility of the various forms of force is called “correlation of forces.” The invariability of the absolute amount in the midst of constant change is called “conservation of force.” This principle of correlation and conservation of force must be looked upon as one of the grandest generalizations in modern science, a principle startling at first, but when clearly understood and firmly grasped, almost axiomatic. It must be considered a necessary truth, and as such is a legitimate basis of deductive reasoning.

The correlation of *physical* forces is universally recognized as a principle in science, and not only so, but has already been productive of many beautiful and useful *results*; but the correlation of physical and *vital* forces while generally recognized as a probable fact has only been speculated on in a vague and as yet unfruitful manner. The science of life is scarcely yet ripe for the legitimate extension of this principle over its domain. The most elaborate attempt of this kind which I have seen is contained in the very remarkable and suggestive paper of Dr. Carpenter, entitled “mutual relation of physical and vital forces,” and published in Phil. Trans. for the year 1850.

In the present paper I wish simply to present a few thoughts, which have originated in my own mind, in the course of reflection on this subject, in the hope that they may prove suggestive to others. They have at least the merit of being uninfluenced by the writings of others—and therefore perhaps of presenting the subject in a somewhat new light. I sincerely wish I

could present the matter in a more definite form, but it is certain that where a subject is not perfectly understood, the attempt to give our ideas more definiteness also makes them more questionable. We are obliged to be content with a certain vagueness, in the hope that by the use of right methods a clearness will come after. We must gratefully accept the twilight in the hope that it marks the approach of the full light of day.

There are four planes of material existence which may be regarded as being raised one above the other. The *first* and lowest is the plane of elementary existence, the *second* the plane of chemical compounds, or mineral kingdom, *third*, the plane of vegetable existence, and *fourth*, of animal existence. Now it is apparently impossible for any known force in nature to raise matter through all these grades at once. On the contrary, there is a special force adapted for the elevation of matter from each plane to the plane above. It is the special function of chemical affinity to raise matter from plane No. 1 to No. 2. All the changes too which take place upon plane No. 2 by the mutual reactions of bodies situated on that plane, are under the guidance and control of this force. It is the special prerogative of the force of vegetation—of vegetable life, to lift matter from No. 2 to No. 3, i. e., from the condition of mineral matter to the higher condition of vegetable matter. All the changes which take place upon this plane, the laws of which constitute vegetable physiology, are under the guidance of this force. Finally, the force of animal life and that alone enjoys the privilege of lifting matter still higher into the 4th plane, i. e., the plane of animal existence. No force in nature can lift from No. 1 to No. 3, or from No. 2 to No. 4. Plants cannot feed entirely upon elementary matter, nor can animals feed upon mineral matter. The reason of this will be seen in the sequel. Thus it seems that after matter is raised from the elementary to the mineral condition, it requires an additional force of another and peculiar kind to raise it into the vegetable kingdom, and again another accession of force to raise it into the animal kingdom. These kingdoms are, therefore, truly represented as successive planes raised one above the other, thus :

- No. 4, *Animal Kingdom.*
- 3, *Vegetable Kingdom.*
- 2, *Mineral Kingdom.*
- 1, *Elements.*

If then it be admitted that this is the relative position of these planes—that it requires a greater and greater expendi-

ture of force to matter upon each successive plane, then it follows that any amount of matter returning to a lower plane by decomposition must set free or develop a force which may under favorable circumstances raise other matter from a lower to a higher condition. Or to express it by a mechanical illustration, a given amount of matter falling from one plane to any plane below, develops a force sufficient to raise an equal quantity of matter an equal height. Thus decomposition must in every case develop force, which force may take the form of heat as in combustion, or electricity as in electrolysis, or may expend itself in forming chemical compounds or even in organizing matter.

Again, in the same manner as matter may be arranged in several distinct and graduated kingdoms, so it seems to me the forces of nature may also be properly divided into distinct groups arranged in a similar manner one above the other. These are the *physical*, the *chemical* and the *vital* forces. And as in the case of matter so also in the case of force, it is impossible to pass directly from the lowest to the highest group without passing through the intermediate group. The conversion of *physical* into *vital* force seems impossible without passing through the intermediate condition of *chemical force*.

These are the simple principles upon which are based all that follows—principles which may possibly seem fanciful to some unfamiliar with the principle of conservation of force, but the number of phenomena which they consistently explain will I hope entitle them to serious thought.

1st. It is well known that chemical elements, in what is called the "nascent condition," i. e., at the moment of liberation from previous combination, exhibit a peculiar energy of chemical affinity not exhibited under other circumstances. It seems to me that this is readily explicable on the principle of conservation of force. At the moment of decomposition the chemical affinity which bound the elements together and which was before satisfied, is suddenly left unsatisfied. There is an attraction set free which was before disguised—a force liberated which was before latent. If conditions favorable are present this force may preserve the form of chemical affinity, and expend itself in forming other chemical compounds; or even, as we shall see hereafter, in organizing matter. But if favorable conditions are not present, then it may take some other form of force, e. g., heat or electricity, and therefore no longer exist as chemical affinity. The chemical affinity is said to be lost. To return to the mechanical illustration used above. Matter falling from plane No. 2 to plane No. 1 develops force sufficient to raise other matter from plane No. 1 to No. 2, but

which in the absence of such matter may expend itself in heat or electricity or some other form of physical force.

2d. It is a fact, now well established, that the seed in germination forms carbonic acid, and in doing so loses weight. That is, the organized matter of the seed is *partially decomposed*, a portion of its carbon uniting with the oxygen of the air to form carbonic acid. Now it is this *decomposition* which develops the force by which germination is effected. A portion of the organic matter of the seed is *decomposed*. This decomposition sets free a force which suffices to organize the rest. The force necessary and therefore the amount of decomposition necessary in this case is small, because the work to be accomplished is simply the change from one form of organic matter to another, or rather from *organic* to *organized* matter—to recur again to the former illustration, merely shifting a certain quantity of matter from one place to another upon the plane No. 3. “But how,” it may be asked, “is this decomposition brought about?” This seems to be effected by the heat and perhaps (according to Hunt) by the actinic rays of the sun.* Heat and actinic rays have been spoken of by many writers, e. g., by Carpenter and by Robert Hunt, as the physical force which is changed into organizing force by means of the “substratum of an organized structure:” but the peculiarity of the view which I now present, is that this conversion does not take place *immediately*, but only *through the mediation of another force more nearly allied to the vital, viz: chemical force*. The food is laid up in the seed mostly in the form of starch. In the act of germination this starch is changed into sugar. Starch as is well known differs from sugar in two important respects, viz., it is *insoluble* and it is more *highly carbonized*.† Now according to the ordinary view, the only object of the partial decomposition is to change the food from an insoluble to a soluble form—and this can be done only by elimination of a portion of the carbon in the form of carbonic acid. According to the view which I now present, *the food is always laid up in a more highly carbonized condition than is wanted, in order that force may be set free by elimination of superfluous carbon*. According to the ordinary view, if an insoluble food could be found, capable of conversion into the soluble form, without loss of carbon; then germination of the seed might take place without loss of weight, by the direct conversion of heat into vital force. According to my view, *decomposition* and there-

* See Report by Robert Hunt on the growth of Plants, Rep. Brit. Assoc., 1846, p. 33, 1847, p. 30.

† Robert Hunt, Rep. Brit. Ass., 1847, p. 20-22. Carpenter, Comp. Phys. p. 288. Mülder, Chem. An. and Veg. Phys., pp. 208, 230.

fore loss of weight, is absolutely necessary to develop the organizing force, the loss of weight being in fact the exact measure of that force.

3d. As soon as the plant develops *green leaves*, a complete change takes place in its mode of development. It no longer loses weight, but increases in weight. It not only develops, but *grows*. The reason of this is, that the organizing force is no longer developed by decomposition of food laid up within its own tissues, but by the decomposition of food taken *ab externo*. Sunlight is universally admitted to be the physical force concerned in this decomposition. Farther, it is generally supposed that there is a direct and immediate conversion of light into vital force in the green leaves of plants. But evidently this is impossible, since the *work done by the light is the separation of the two elements carbon and oxygen*. Light is therefore converted into *motion*. It is therefore the chemical affinity thus set free which is the force immediately converted into vital force. The food of plants consists of carbonic acid, water and ammonia (CO^2 , HO and NH^3), or in some cases, according to M. Ville, of CO^2 , HO and N^* . Sunlight, acting through the medium of the green leaves of plants, has the remarkable power of decomposing CO^2 . The *force thus set free from a latent condition*, or the chemical affinity of carbon in a *nascent condition*, is the force by means of which C, H, O and N are raised to the organic condition.† To return to my former illustration, matter (oxygen) falling from the second to the first plane develops force sufficient to raise other matter from the second to the third plane. Thus, it is evidently *impossible on the principle of conservation of force that plants should feed entirely upon elementary matter*; whereas, according to the ordinary view of the direct conversion of light into organizing force, there is no reason why plants should not feed entirely on elements, except that one of them, carbon, is insoluble.

4th. There are many other phenomena of vegetable life which receive a ready explanation on this theory. I have said that sunlight has the power of decomposing carbonic acid only in the *green leaves* of plants. *Pale plants*, such as the Fungi among cryptogams and the Monotropa among phænogams, have

* See review of the controversy between Boussingault and Ville on this subject, Bib. Univ. Arch. des Sci., vol. 30, p. 305; also Phil. Mag., 4th series, vol. 13, p. 497; Ann. des Sci., 4th series, vol. 2, p. 357; Am. Jour. Science, vol. 19, p. 409; Bib. Univ. Arch. des Sci., vol. 28, p. 335; Am. des Sci., 4th series, vol. 7, p. 5.

† Ammonia is also probably decomposed in the tissues of the leaves of plants, (Carpenter, correlation of physical and vital forces, Phil. Trans., 1850, p. 732. See also Morren, Bib. Univ. Arch. des Sci., new period, vol. 5, p. 84). This would, of course, produce additional organizing force.

no power to decompose CO^2 . These plants, therefore, cannot feed upon chemical compounds—mineral matter. They *must feed upon organic matter*, which organic matter *in its partial decomposition furnishes the force necessary for organization*. If so, then this decomposition, as in the case of germination, must be attended with the elimination of CO^2 . Both of these are known to be facts. Pale plants do feed upon organic matter and do evolve CO^2 . The necessary connection of these facts with one another and with the principle of conservation of force, is now for the first time, as far as I know, brought out. The phenomena of nutrition in these plants is similar to that of seeds in germination, except that the latter contains the organic matter already laid up within its own tissues, while the former derives it from decaying vegetable or animal matter taken *ab externo* into its tissues. In this case too, as in germination, heat is apparently the physical force which effects the decomposition of the organic food, and which is therefore converted indirectly through chemical into vital force. Light is actually unfavorable to this process, for light tends to decompose, not to form CO^2 . In both cases therefore the conditions favorable for nutrition are, first, abundance of soluble organic matter; second, absence of light and presence of heat. This is then apparently the true reason why germinating plants and pale plants avoid the light. These plants grow by the *oxydation* of carbon and formation of CO^2 . Light *decomposes* CO^2 , and must therefore be antagonistic to its formation, and consequently to the growth of these plants. Whether or not this property of light is entirely limited by the condition of its acting through an organic tissue, is a question yet undetermined. Heat we know is favorable to the oxydation of carbon (combustion, fermentation, putrefaction, &c.) under all circumstances. Has light an opposite property also under all circumstances, or is this opposite property of light limited to the condition of its acting through the medium of an organism? I hope the experiments already commenced and still in progress, by my brother, Prof. John LeConte, and published in the last proceedings and in the American Journal of Science and Arts, vol. 24, p. 317, will eventually furnish the means of solving this very important problem. I do not wish to anticipate the final results of these experiments, but it seems to me that the negative results thus far obtained, rather support the view that the action of light is not thus limited. In all experiments on this subject the light and heat of the sun have been combined. Now heat, we know, is favorable to combustion. The fact then that combined light and heat produced no effect, would

seem to indicate that light counteracted the effect of the heat of the sun.

5th. *Etiolated plants*, or plants artificially blanched by exclusion of light, exhibit the same phenomena and for the same reason. These plants cannot receive their organizing force through the decomposition of CO_2 by sunlight: therefore they are obliged to obtain it from decomposition of organic matter. Hence these plants require organic food, hence also they evolve CO_2 instead of oxygen. In this case also decomposition of organic matter, with a separation of a portion of the carbon in the form of CO_2 , furnishes the organizing force. In the absence of any external organic matter in the form of humus or manure, etiolated plants, like germinating seeds will feed for awhile upon organic matter previously accumulated in their tissues in the form of starch and actually *lose weight* of solid matter.*

6th. In a most interesting and suggestive article in the Bibliothèque Universelle (Archive des Sciences†), on the subject of humus, M. Risler shows in the most conclusive manner that organic matter in a soluble condition (soluble humus) is taken up by *almost all plants*. This fact had been previously proved experimentally by Th. de Saussure, but having been denied by Liebig, it has been very generally neglected by vegetable physiologists. The doctrine of Liebig and of physiologists generally is that, except in case of pale plants, organic matter is decomposed into CO_2 , HO and NH_3 , i. e., must fall into the mineral kingdom before it can be absorbed and assimilated by plants, and therefore that organic manures only supply the same substances, and in exactly the same form, which are already supplied, but in insufficient quantities, by the atmosphere. But M. Risler repeats with great care the experiments of de Saussure, and confirms the accuracy of his conclusions. Hyacinths and other bulbs were placed with their roots suspended in water colored with soluble extract of humus. When these plants were placed in the sun, water became rapidly decolorized. Other roots, such as carrots, also germinating grains of wheat, were observed to produce the same effects. An extract of humus was exposed at a somewhat elevated temperature to sunlight under a bell-glass. Microscopic plants developed in great abundance. As long as these plants continued to develop the infusion was transparent and did not putrefy in the slightest degree: and yet there was a constant evolution of CO_2 , as shown by analysis of the air in the bell-glass. "Now

* Carpenter, Comp. Phys., p. 285.

† Bib. Un. Arch. des Sci., new period, vol. 1, p. 305.

the cellulose formed in the liquid contained carbon. This carbon did not come from the CO^2 of the air, for the liquid, far from *absorbing*, disengaged CO^2 . Therefore the soluble humus must have furnished the carbon *directly* to the vegetable cells." It could not have furnished it *indirectly* in the form of CO^2 , derived from decomposition of the organic matter, otherwise *oxygen* instead of CO^2 would have been eliminated. M. Risler thinks moreover that the *embryo* in germination takes up soluble organic matter in the form of humus, in addition to the soluble organic matter contained within the cotyledons, and that the evolution of CO^2 by germinating seeds due in part also to the oxydation of humus. Finally, according to the same author, the formation of roots in all plants, but particularly those containing much starch or sugar, is due to the direct absorption of humus, and not, as is generally supposed, by the fixation of carbon by means of light. "In order," says he, "that CO^2 of the air should form these substances, it is necessary, in the beet and the potato, that there should be a descending sap, which there is not." Moreover, if the carbon was taken from the soil in the form of CO^2 , there should be elimination of oxygen, instead of evolution of CO^2 ; but the converse is the fact, as has been proved in the most indisputable manner by de Saussure and Boussingault.*

Mülder is equally explicit in affirming that plants absorb soluble organic matter, which is converted into roots, by elimination of a portion of the carbon, into starch and sugar. (Mülder, pp. 620, 664, 682.) Thus, according to these authors, *sap is actually elaborated by the roots from organic manures.*

Now, according to the theory which I propose, *this change from humus into starch, sugar or cellulose, furnishes an additional life-force.** Humus is a more highly carbonized substance than either starch or cellulose. By the *partial decomposition of humus* in the tissues of the plant, with the elimination of a portion of its carbon (removed by oxydation), *a chemical force is set free, which serves to assimilate the remainder.* Hence, this process of evolution of CO^2 , as we have already said, is opposed by light, but favored by darkness and heat. Light favors the formation of chlorophyll, of woody fibre, of essential oils, gums, &c.; darkness, heat and organic manures favor the formation of sugar, starch, &c. Hence the explanation of the well-known fact, that by covering up the lower portions of potato plants by heaping earth around them, many buds, which would otherwise form leafy *branches*, develop into *tubers*. Hence also the explanation of the equally well-known fact,

* Bib. Un. Arch. des Sciences, new series, vol. 1, p. 6.

that the roots of plants seek and grow most rapidly in the direction of most abundant food. If the sap is elaborated entirely in the leaves, it is difficult to understand why the descending sap should flow in greater abundance in one direction than another. But if sap is elaborated in *the root itself*, it is easy to see why growth is most rapid in the direction of most abundant manure. It is easy to see too why roots avoid the light; since light decomposes CO_2 , and therefore must be unfavorable to the formation of this substance.

7th. It is a well-known fact, that the so-called *respiration of plants*, consists of two distinct and apparently opposite processes: first, the absorption of CO_2 by the leaves, and also in solution by the roots, the decomposition of this CO_2 by means of light with the fixation of the carbon and the elimination of the oxygen; second, the re-composition and evolution of CO_2 . The *decomposition* of CO_2 undoubtedly takes place in the leaves, but where the re-composition of CO_2 takes place is not so well ascertained. It is exhaled however, like the oxygen, from the leaves. The process of decomposition of CO_2 takes place only during the day, as light is absolutely necessary for this process. The *re-composition* of CO_2 takes place night and day, although its exhalation, according to some observers, seems to be more abundant during the night. The process of decomposition of CO_2 is well understood—of that of re-composition our knowledge is very imperfect. M. Risler's explanation of this latter process seems most probable. Plants, we have seen, undoubtedly absorb soluble organic matter, i. e., humus. Humus, we know, is a more highly carbonized substance than cellulose or starch. This humus is there oxydized in the roots and interior of the trunk, away from light, by means of oxygen also absorbed by the roots and thus forms CO_2 . This CO_2 then circulates in the sap to be exhaled by the leaves or perhaps to be again decomposed by sunlight in this organ. In the absence of light the whole is exhaled undecomposed. This readily accounts for the apparently greater exhalation of CO_2 during the night. A series of well-conducted experiments would test the truth of this view. If it is true, there should be a relation between the richness of the soil in organic manures and the amount of CO_2 exhaled. For a given amount of growth, the amount of CO_2 exhaled is the measure of the amount of food taken up in the form of organic matter, and the amount of oxygen exhaled is the measure of the amount of food taken in the form of mineral matter. Or if the exhaled CO_2 is decomposed in the leaves during the day, then of course the difference between the amount exhaled during the night and day would enter as an element in the calculation. Also

it would seem that those plants, especially, which frequent rich shady spots, should exhale proportionally more CO^2 and less oxygen, than those loving thin soils and sunny places.

In plants then, there are *two sources of organizing force*, the relative proportion of which varies infinitely, according to the amount of light, heat, color of the plant and richness of the soil in organic matters. The two sources are *immediately*, 1st, the decomposition of CO^2 , 2nd, the decomposition of soluble highly carbonized organic matter: *remotely* the two sources are *light and heat*. In plants which first take possession of desert spots, bare rocks, &c., the *first* is the only source. In pale plants and fungi the *second* is the only source; but in most plants the two are combined in various proportions. The 1st must of course be considered the most fundamental and necessary, the 2nd being evidently supplementary. The decomposition of CO^2 by sun-light may be considered as the original source of all vegetation, but in most of the higher orders of plants the process of nutrition is expedited by the re-absorption of organic matter before it again returns to the condition of CO^2 , HO and NH^3 .

8th. The *egg* during incubation, absorbs oxygen, evolves CO^2 , and probably HO , and loses weight. As the result of this evolution of CO^2 we find the *egg develops*. What it *loses in weight* it *gains in organization*. Now what is the source of the organizing force? It evidently bears a direct relation to the loss of weight. Here also, then, we have *partial decomposition furnishing the necessary force*. A portion of the organic matter, falling from the organic to the mineral plane, sets free a force which raises the remaining portion into a slightly higher condition. Heat is evidently the physical force or agent which is transformed, not directly but *indirectly, through chemical affinity*, into vital force. In other words, heat is the agent which effects the necessary decomposition. The phenomena of development of the egg is, therefore, very similar to that of the seed.

9th. *After the hatching* of the egg, the animal no longer loses weight; because recomposition of food taken *ab externo* proceeds *pari passu* with decomposition. But in this case also *decomposition supplies the force by which recomposition is effected*, and growth and development carried on. As this is an important point I will attempt to explain it more fully.

It is well known that in the animal body there are going on constantly, two distinct and apparently opposite processes, viz., decomposition and recomposition of the tissues; and that the energy of the life is exactly in proportion to the rapidity of these processes. Now according to the ordinary

view, the animal body must be looked upon as the scene of continual strife between antagonistic forces, chemical and vital; the former constantly tearing down and destroying, the latter as constantly building up and repairing the breach. In this unnatural warfare the chemical forces are constantly victorious, so that the vital forces are driven to the necessity of contenting themselves with the simple work of reparation. As cell after cell is destroyed by chemical forces, others are put in their place by vital forces, until finally the vital forces give up the unequal contest and death is the result. I do not know if this view is held by the best scientific minds at the present day, as a fact, but it certainly is generally regarded as the most convenient method of representing all the phenomena of animal life, and as such has passed into the best literature of the age. Certain it is, however, that the usual belief, even among the best physiologists, is that the animal tissue is in a state of unstable equilibrium; that constant decomposition is the result of this instability, and that this *decomposition and this alone, creates the necessity of recomposition*—in other words, creates the necessity of food. But according to the view which I now propose, decomposition is *necessary to develop the force* by which organization of food or nutrition is effected, and by which the various purely animal functions of the body are carried on—that decomposition not only creates the *necessity*, but at the same time furnishes the *force* of recomposition.

But it will no doubt be objected that according to the principle of conservation of force, decomposition of a given amount of matter can only effect the recomposition of an equal amount—that a given quantity of matter falling a given height, can only raise an equal quantity an equal height: the whole force developed by decomposition seems to be expended in maintaining the body at a given position. How then can *growth and animal activity* go on? The answer to this question is obvious enough, when we recollect the nature of the food of animals. Animals it is well known cannot feed upon mineral matter, but only on food already organized, at least up to the vegetable condition. But when decomposition takes place, the animal matter returns no longer to the vegetable condition from which it was immediately raised, but to the mineral condition. It is decomposed into CO_2 , HO and *urea*.

This last substance, though not strictly a mineral substance, is far below the condition of vegetable matter. Thus it is evident that *a given quantity of matter falling down from the condition of animal to that of mineral matter, i. e., from the 4th to the 2nd plane, would develop force sufficient to lift a*

larger quantity of matter from the vegetable to the animal condition, i. e., from the 3rd to the 4th plane, and yet perhaps leave much residual force, unexpended. Thus it is possible, and not only possible but certain, on the principle of conversation of force, that decomposition of animal tissues should set free a force, a part of which is consumed in the recombination of a *larger* amount of new matter and thus maintaining growth; a part in animal heat and a part in animal activity of all sorts. In this view of the case, we see at once the absolute necessity that the food of animals should be organized. Upon the principle of conversation of force, growth and animal activity, in a word, animal life would otherwise be impossible.

It follows also from the above, that the higher the organization of the food the smaller the amount of force necessary to effect assimilation, and therefore the larger the amount of residual force to be expended in animal heat and animal activity. In this we find a ready explanation of the superior activity of *carnivorous* animals, and the loss of animal activity which results in a state of domestication from the use of vegetable diet; also of the supposed superior activity of men fed upon meat diet.

10th. I have spoken thus far of only one source of vital force in animals, viz., the *decomposition of the tissues*. I have attempted to show how, upon the principle of conservation of force, this is sufficient to carry on the growth and the activity of the animal organism. But decomposition of the tissues, though the fundamental source—the source characteristic of and peculiar to animals—of immediate and universal necessity in this kingdom, and in many cases sufficient of itself, is not the only source. There is also in animals as in plants a supplemental source, viz., the *decomposition of food*.

It is well known that the food of animals consists of two kinds, the nitrogenous, such as albumen, fibrin, casein, &c., and the non-nitrogenous, such as fat, starch, sugar, gum, &c. According to all physiologists since Liebig, the nitrogenous alone are used in the repair and growth of the tissues. The non-nitrogenous are either quickly consumed in respiration, or else are laid up in the form of fat for future consumption in the same way. Now there can be no doubt that animals may live entirely on nitrogenous food; in which case the whole vital force, whether for assimilation of food or for animal heat and animal activity, is derived from the decomposition of the tissues. This is the case also, apparently, in the starving animal, particularly if lean. But in almost all cases much food in the form of fat, starch, sugar, &c., (non-nitrogenous,) is

never transformed at all into tissues, but is taken into the blood, gradually decomposed, oxydized in the course of the circulation, changed into CO^2 and HO , and finally removed by exhalation from the lungs. Now what is the object of the non-nitrogenous food, since these do not form any part of the tissues but are again decomposed and thrown out of the system? The answer usually given is that such food is used in the animal economy solely as fuel to keep up the animal heat. On this view it is difficult to see why this class of food should be used at all, especially in warm climates. But according to the view which I propose, we have here an *additional source of vital force*. The decomposition of these ternary compounds sets free a force which is used in organizing and assimilating other matter (nitrogenous) and in producing animal activity and animal heat. As in plants, although the decomposition of CO^2 by sunlight is all that is absolutely necessary for growth and development, yet the decomposition of organic food supplies an additional force which greatly increases the vigor and rapidity of vegetation; so in animals, although *decomposition of the tissues* is all that is absolutely necessary to furnish the force of growth and the phenomena of animal life generally, yet the decomposition of non-nitrogenous organic food furnishes additional force by which growth and animal activity may be maintained without too great expenditure of the tissues.

11th. In what then consists the essential difference between animals and plants? There can be no doubt that it consists, generally, in their relations to one another and to the mineral kingdom. Plants occupy a middle ground between the mineral and animal kingdom—a necessary halting place for matter in its upward struggles. But when we attempt to define this relation more accurately, the problem becomes much more difficult. It is indeed probable that no single distinction will be found free from objection. The commonly received and, to a certain extent, very correct idea is, that the essential distinction consists in their relation to CO^2 . Plants *decompose* and animals *recompose* CO^2 . The beautiful manner in which the two kingdoms stand related to each other through these converse processes, is familiar to all. But it is well known that most plants carry on both of these processes at the same time, while some as fungi, pale plants, &c., only *recompose* CO^2 like animals. It seems to me that at least an equally good fundamental distinction may be found in this, that in plants the fundamental and necessary source of vital force is the decomposition of its *mineral food*; while in animals the fundamental source of vital force is the decomposition of its *tissues*. It

is true that in what I have called the supplementary source of vital force they seem to meet on common ground, viz., the decomposition of *organic food*; but even here there is this essential difference, that in plants this decomposition of organic food is only partial, and therefore furnishes not only *force* but *material* for organization; while in animals the decomposition is complete and therefore furnishes only *force*.

As a necessary result of the above, it would seem that the "*vortex*" of Cuvier is characteristic of animals. There seems no reason to believe that a tissue once formed in plants is ever decomposed and regenerated, as is the case in animals. When plant-cells decompose, the tissue dies. Hence the absolute necessity of *continuous growth* in plants. In this kingdom *life* is synonymous with growth. There is no possibility of life without growth. There is no such thing as determinate size, shape, or duration. There is no such thing as maturity, or if so, death takes place at the same instant. As cell-life is necessarily of short duration, and as there is no regeneration of tissues in plants, it is evident that the life of the tissues must be equally short. Thus plant life can only be maintained by the continual formation of *new tissue* and a constant travelling of the vital force from the old to the new. In exogenous plants the direction of travel is from the interior to the exterior; in endogens from exterior to interior, and still more from below upwards by the continual addition of new matter at the apex. In fungi where there is no such superposition of new tissue upon the old, where growth takes place by multiplication of cells throughout the whole plant—in other words, a true interstitial growth as in animals—since there is no regeneration of tissues, the duration of the life of the plant is limited by the duration of cell-life.

The *respiration* of animals, also, differs essentially from that of plants. At one time the absorption of CO_2 and exhalation of O was called the respiration of plants. It is universally admitted now, however, that this is rather a process of assimilation than of respiration. The recomposition and exhalation of CO_2 , as soon as discovered, was very naturally likened to animal respiration, and is in fact looked upon by many, as for example the physiologist Carpenter, as a true respiration. But there is an essential difference between this and animal respiration, which I have already pointed out. Its very significance is radically different. The essential object of animal respiration is the removal of poisonous decomposed matters from the organism. The so-called respiration of plants, on the contrary, is rather a process of assimilation, since by it

the too highly carbonized organic food, by the elimination of a portion of its carbon, is brought into a proper condition for organization. A true respiration is necessarily connected with a change of the matter of the tissues—with the vortex of Cuvier—which has never been shown to exist in plants. It is true the exhalation of CO^2 has been looked upon by some physiologists as indicative of a regeneration of tissues, but I have already shown that this is probably not the case, but on the contrary that the CO^2 is formed by the partial decomposition of highly carbonized organic food.

12th. The most natural condition of matter is evidently that of chemical compounds, i. e., the mineral kingdom. Matter separated from *force* would exist, of course, only as elementary matter or on the *first plane*; but united with force, it is thereby raised into the *second plane*, and continues to exist most naturally there. The *third plane* is supplied from the second, and the fourth from the third. Thus it is evident that the quantity of matter is greatest on the second and least on the fourth plane. Thus nature may be likened to a pyramid, of which the mineral kingdom forms the base and the animal kingdom the apex. The absolute necessity of this arrangement on the principle of the conservation of force may be thus expressed. *Matter, force and energy* are related to one another in physical and organic science somewhat in the same manner as *matter, velocity and momentum* in mechanics. The whole *energy* remaining constant, the greater the *intensity* of the force (the elevation in the scale of existence) the less the quantity of matter. Thus necessarily results what I have called the pyramid of nature, upon which organic forces work *upwards*, and physical and chemical forces *downwards*.

13th. As the matter of organisms is not created by them, but is only so much matter withdrawn, borrowed as it were, from the common fund of matter, to be restored at death; so also organic forces cannot be *created* by organisms, but must be regarded as so much force abstracted from the common fund of *force*, to be again restored, the whole of it, at death.* If then vital force is only transformed physical force, is it not possible, it will be asked, that physical forces may generate organisms *de novo*? Do not the views presented above support the doctrines of "equivocal generation" and of the original creation of species by physical forces? I answer, that the question of the origination of species is left exactly where it was found and where it must always remain, viz., utterly beyond the limits of human science. But although we can never hope

* Carpenter, Phil. Trans, 1850, p. 755.

by the light of science to know *how* organisms originated, still all that we do know of the laws of the organic and inorganic world seem to negative the idea that physical or chemical forces acting upon inorganic matter can produce them. Vital force is transformed physical force, true, but the necessary *medium* of this transformation is an organized fabric; the necessary condition of the existence of vital force is therefore the previous existence of an organism. As the existence of physical forces cannot even be conceived without the previous existence of matter as its necessary *substratum*, so the existence of vital force is inconceivable without the previous existence of an organized structure as its necessary substratum. In the words of Dr. Carpenter, "It is the speciality of the material substratum thus furnishing the medium or instrument of the metamorphosis which establishes and must ever maintain a well marked boundary line between physical and vital forces. Starting with the abstract notion of force as emanating at once from the Divine will, we might say, that this force operating through inorganic matter, manifests itself as electricity, magnetism, light, heat, chemical affinity and mechanical motion; but that when directed through organized structures, it effects the operations of growth, development and chemico-vital transformations."

II.—*Clinical Lectures on the Diseases of Women*. By J. Y. SIMPSON, M. D., F. R. S. E., Professor of Medicine and Midwifery in the University of Edinburgh.

ON SPURIOUS PREGNANCY, OR PSEUDOCYESIS.

GENTLEMEN,—The author of the two remarkable dissertations on "Diseases of Women," usually published among the Hippocratic treatises, when at one place treating of displacement and stricture of the os uteri, takes occasion to remark that sometimes under such circumstances "the menstrual fluid is determined to the mammae, and produces their enlargement; the abdomen swells, and inexperienced patients believe themselves to be pregnant; in truth," he continues, "they present all the phenomena usually seen in women at the seventh or eighth month of utero-gestation; the belly attains a proportional degree of enlargement; the breasts swell up, and milk seems to

be secreted. But when this period has passed, and the full term of pregnancy should be complete, the mammæ shrink up and diminish in size, the abdomen likewise collapses; all trace of the milk disappears, and the abdomen sinks in, and all tumefaction is dispelled."

The diseased state described in the preceding quotation is that state usually spoken of as the state of "spurious pregnancy." In his "Nosology," Dr. Mason Good proposed to describe this peculiar affection under the corresponding Greek name of "Pseudocyesis," from *ψεύδος*, a lie, and *κύησις*, pregnancy. We have lately had two examples of this disease among patients visiting the female ward. One of the patients, who remained in the ward for a short time, suffered from suppression of the menses, continuing for a period of three or four months, and alternating with a state of menorrhagia; she had occasional sickness; the mammæ were slightly enlarged, and the abdomen somewhat protuberant. She suffered, in short—but not in a well-marked degree—from this morbid condition of spurious pregnancy. In the other patient, who was under the medical charge of one of the students of the class, not only were all the usual phenomena of pregnancy well-marked for the usual time; but, what is far less frequent, there latterly supervened all the common phenomena of labor; but of labor without any result, as the uterus was quite empty.

There are two varieties of pseudocyesis or spurious pregnancy, a *local* and a *constitutional*. The former I have already described to you as seen in those cases of dysmenorrhœa where the patient has occasionally, or even at every monthly period, excessive development of the mucous membrane, which becomes vascular and swollen, and is in part shed off in the form of a separate membrane, resembling in every respect the decidua which is formed in the early weeks of every real pregnancy. In such cases the patients usually suffer a great deal of pain during the expulsion of these uterine casts, and they are sometimes affected with some of the ordinary constitutional and sympathetic phenomena of pregnancy. Thus they frequently are troubled with sickness and vomiting; the mammæ sometimes become enlarged, and the areolæ darkened for one or two weeks both before and after these dysmenorrhœal membranes are thrown off. The most striking features of the disease in such cases, however, and the most distressing symptoms depend upon the local changes in the uterus; and as I have already discussed these, both as regards their pathology and treatment, in my lecture on membranous dysmenorrhœa, I need say no more about that subject now, but pass on at once to the consideration of that more frequent form of spurious

pregnancy, of which the more striking phenomena are all of constitutional origin, and the disease true, or

CONSTITUTIONAL PSEUDOCYESIS.

In this constitutional or sympathetic variety of spurious pregnancy, then, there may be no appreciable local change whatever; but the patient suffers from nausea and vomiting, and the other sympathetic phenomena common to pregnant females. The mammæ become enlarged, the areolæ are darkened, and the gland gives forth its milky secretion. The abdomen enlarges gradually until it occasionally comes to assume the form, and size too, of an abdomen which contains a gravid uterus, and the patient feels movements in its cavity, which she unhesitatingly pronounces to be movements of a fœtus. Menstruation is usually pretty methodic, but you will occasionally find it altogether suppressed for a time, or only coming on very irregularly, and with a scanty flow. All these symptoms may arise and go on slowly and progressively for a period of nine months, or longer, and the patient may labor under the delusion that she is in the family-way, until, it may be, symptoms set in resembling the ordinary efforts of labor, and then, when a medical man is sent for to attend at the delivery, it may happen that she first discovers she never has been pregnant at all.

FREQUENCY OF THE DISEASE.

Before I proceed to point out to you more particularly the nature of this disease, and to tell you how it is to be recognised and treated, let me first of all remark that it is a disease which, when you come to practise, you will find to be of far more frequent occurrence than the comparative silence of our obstetric text-books on this malady would lead you to infer. It is not by any means confined to the married, or to those who have borne children, but is seen among the unmarried and childless as well. Among the former, however, it is more frequent; and there are perhaps few women in married life who have not presented more or less marked symptoms of it once or oftener. The disease, as we have seen, was known of old, and is duly noticed in the Hippocratic writings. But in modern times medical writers have passed it by in almost complete silence; and the only notice of any importance in regard to it that I know of in the English language, is to be found in the admirable and classical work of my friend, Dr. Montgomery, on the "Signs and Symptoms of Pregnancy,"—a work which

I beg strongly to recommend to your careful perusal, as a volume not less remarkable for its great accumulation of original and collated facts, than for its logical statements and reasoning, and its elegant and classic style. Yet, as I say, cases of spurious pregnancy are constantly occurring in practice, and patients often go about from one practitioner to another seeking relief, or desiring to obtain some certainty as to the nature of their affection, a point in regard to which they are often in the greatest doubt. They fancy themselves, for the most part, to be pregnant; but sometimes they suppose themselves to be subject to very different kinds of disease, as in the case of a patient from the West Indies, whom I have under my care just now, and who, it was there imagined, had some hydatids in the uterus.

To show you how difficult it is to distinguish cases of simple spurious pregnancy from other forms of disease, let me merely tell you one fact. Six different cases have been put upon record, where patients have been supposed to be laboring under ovarian disease; and in these six cases, when the abdomen was laid open with the view of removing the ovarian tumor, there was found to be no tumor there—nothing unusual or abnormal, except, perhaps, a slight degree of distension of the bowels. Such needless tampering with the lives of patients may suffice to impress upon you the dangers of making a false diagnosis, and teach you not to neglect any means by which you are likely to obtain a clearer insight into the nature of this often obscure and puzzling form of disease.

TIMES OF ITS OCCURRENCE.

As to the period of life when it is most likely to be met with, Dr. Montgomery thinks that it occurs most frequently at the climacteric period, when the catamenial discharges cease to appear, and when the female constitution seems to become more liable to be affected by morbid influences. But I feel pretty certain that the disease occurs at least as often during the first year after marriage as at any later period. At least, you will find, on making inquiries of patients, that they have very often been deceived into the belief that they have become pregnant at the time I refer to, from the temporary suppression of the menses, attended with sickness, and some degree of swelling of the abdomen; but probably from the circumstance that the delusion is not usually kept up for such a length of time in these patients, they do not so often come under the observation of the practitioner, and are thus very commonly altogether overlooked. Spurious pregnancy, however, may occur

at any period during the catamenial life, and it is often enough developed during the intervals between two successive real pregnancies; and a succession of attacks is sometimes seen in the same individual.

MAY THE DISEASE OCCUR IN THE UNMARRIED?

Certainly, and then it constitutes a very delicate class of cases. When occurring in the unmarried, it is usually set down as hysteria; but sometimes all the characteristic phenomena are most distinctly indicated, and it is then a very difficult and delicate matter to answer the patient's inquiries regarding her disease. No one would choose to speak to the patient or her friends of "spurious pregnancy" under such circumstances, as the mere name itself would be sufficiently offensive. Perhaps, the descriptive designation proposed by Dr. Good, of pseudocyesis, would save sometimes the practitioner from difficulty—when hard pressed as we sometimes are—to give our patient's affection a proper name. That the affection may occur in the most moral persons, however, and in virgins, is certain; and if any confirmation were needed, it would be found in the fact, that it has sometimes been seen among a class of females as to whose morality and state no question can be raised, namely, the females of our domestic animals. Harvey pointed out long ago, in his celebrated work on "Animal Generation," that "over-fed bitches, which admit the dog without fecundation following, are nevertheless observed to be sluggish about the time they should have whelped, and to bark as they do when their time is at hand; also to filch away the whelps from another bitch, to tend and lick them, and also to fight fiercely for them. Others," he goes on to say, "have milk or colostrum, as it is called, in their teats, and are, moreover, subject to the diseases of those which have actually whelped; the same thing is seen in hens which cluck at certain times, although they have no eggs on which to sit. Some birds also, as pigeons, if they have admitted the male, although they lay no eggs at all, or only barren ones, are found equally sedulous in building their nests." I had a patient in the neighborhood of Edinburgh, who used to keep a seraglio of female dogs, and was interested in observing their habits and physical characteristics. This person was a careful observer, and told me that every year, and occasionally twice every year, some of these "over-fed bitches" had all the symptoms of pregnancy, although they had been kept secluded from all male society. And the phenomenon so often spoken of, of animals, without any offspring of their own, adopting and nursing the young of

other animals, belonging sometimes to an entirely different class, is doubtless only one of the forms in which this peculiar affection may be manifested.

MISTAKES FROM IT AMONG THE MARRIED.

But though the disease may thus manifest itself among unmarried females, it is chiefly among the married that the more marked instances of it are met with; and awkward enough are the mistakes into which those sometimes fall who are affected by it. I have repeatedly known ladies make all the usual preparations for confinement, secure the services of a nurse and medical attendant, lay in a stock of baby-clothes, and, in short, have every thing in readiness for the birth of a child, when they were in reality not pregnant at all. They may sometimes even be put to very great inconvenience in consequence, breaking up their large establishments in the country, and coming into town at most unseasonable periods, in order to be under the immediate care of their usual accoucheur. I have thrice had ladies come into Edinburgh to be confined under my care, leaving establishments, who, when they came to town, proved not pregnant. A striking instance of this kind occurred in the practice of my predecessor, Dr. Hamilton, who was engaged, not very long before his death, to attend a lady in her approaching confinement. As the expected period drew near, a heavy fall of snow came on and blocked up the roads, and the lady, terrified at the idea of being detained in her country-house, had a number of laborers set on to cut a driving-path through the snow; but it was unnecessary work and trouble, as the case was only one of spurious pregnancy. Such mistakes oftenest occur in patients pregnant for the first time, and who are inexperienced as to the phenomena and sensations of pregnancy. But the affection is by no means limited to them. You will frequently enough in practice find women who have previously borne children making such mistakes about themselves, and imagining that they feel every movement of the child just as they have done in real pregnancies. In some cases, but they are much more rare, you may have the phenomena of spurious parturition, as well as spurious pregnancy. That is, when the ordinary term of nine months has been completed there may supervene the phenomena of a common labor. The ordinary preliminary symptoms are first seen, the pains set in at first irregular, slight and resembling the pains characteristic of the first stage of labor, and gradually change into the regular, strong, expulsive pains characteristic of the second stage. The more complex phenomena of instrumental labors are even

occasionally simulated. Dr. Labatt was once called to deliver a child by means of craniotomy, in a case where a medical practitioner had been in attendance for two days, and where, when he went, there was found to be no child at all. I myself was once sent for by one of the best medical students we ever had at this University, to perform the operation of version on a patient on whom he had been some hours in attendance, and which he fancied to be a case of unavoidable hæmorrhage. But turning of the child was unnecessary, as there was, in fact, no child to turn! The patient was suffering from menorrhagia as a termination of spurious pregnancy. There was a striking example of this disease in the hospital here a few years ago. The patient was sent in from a distance in the country to be delivered of a child, of which she had been supposed to be long in labor. Her medical attendant had had no doubt as to the reality of the pregnancy and the labor, and her husband, who accompanied her to Edinburgh, had as little. Their belief was grounded chiefly on the distinctness and force of the movements of the supposed fœtus, which were so marked and strong, as to lead the husband to maintain that if there was no child within his wife's abdomen, there must be some animal there! The case was seen by Drs. Moir, Weir and several other medical men here, and all agreed that the movements were very deceptive; but, on close examination, they could be distinctly traced to the peristaltic action of the bowels. The uterus was perfectly empty. I have now seen two cases where the propriety of having recourse to the Cæsarean section was proposed in instances of spurious pregnancy. One of these has been fully and ably described by Dr. Keiller, in the *Monthly Journal of Medical Science*. In the other case, I was called to perform the operation on a woman who was dying of some chest disease, and who was believed to have in her womb a living child. But there was no pregnancy whatever.

These symptoms of labor may all recur once and again, even in the same patient, and yet her faith in the reality of her pregnancy may remain unshaken. It is, indeed, most curious to witness with what persistence some such patients, but by no means all, will maintain their belief. The idea that she is in the family-way has such a firm hold of the patient's mind, that it looks as if her brain were impregnated and not her womb, and sometimes no kind of argument suffices to make her change her opinion. You may, it is true, succeed in convincing her at times that her hopes are futile, and you may fondly imagine that you have succeeded in utterly dispelling her empty expectations; but two or three weeks, or only days afterwards, she will return to you as strongly impressed with the genuineness

of her pregnancy as ever. No persuasion or eloquence of yours will almost ever lead her to give up her hope; time alone can prove to her how vain it is, and with some patients it takes a very long time too. I have known the idea obstinately persisted in even for years.

SYMPTOMS AND DIAGNOSIS.

It is not always so easy as you may imagine to recognize a case of this kind, and to discriminate between a case of spurious and a case of real pregnancy, for in the former you will sometimes meet with all the individual and combined phenomena which are ordinarily developed in the latter, and which are usually regarded as characteristic of the pregnant state. The breasts are enlarged, and their areolæ darkened; the menses are often irregular or suppressed, and the abdomen is swollen; the patient suffers from morning sickness and occasional vomiting; and after a time she remarks peculiar sensations in the abdomen, which she unhesitatingly attributes to quickening, or the movements of a foetus. I have said the abdomen is swollen; and let me add, this swelling sometimes imitates very exactly the defined form of the enlargement of the abdomen in true pregnancy; but usually it is more diffuse and less projecting forwards when the patient is laid supine; and in spurious pregnancy, let me add, there is often observed a symptom in the way of external configuration which is rarer in true pregnancy, viz: an appearance of unusual constriction in the region of the diaphragm, or where the chest and abdomen meet, so that the lower ribs look as if they were drawn inwards. All of these common symptoms of true pregnancy may be, and indeed often enough are, manifested in cases of spurious pregnancy; but you will often find, on making more minute inquiry, that there is some startling *exceptional* condition affecting one or more of them. Thus, menstruation is occasionally entirely suppressed—as completely so as in any true pregnancy; but in most cases, it is not entirely suppressed, but only irregular, appearing one month and absent the next, or coming on at irregular and unusual periods, or in some abnormal way. Again, the movements of the supposed child, if carefully investigated, are found to be different in some respects from the usual foetal movements. They may first be perceived unusually early, or, on the other hand, at a period much later than that when the movement of real quickening should first be noticed; or they are felt higher up towards the diaphragm, or much further to one side than is ever the case with foetal movements. And if you inquire of a

patient in this condition of simulated pregnancy who has previously borne children, she will generally admit that the movements differ in character from those which she had been wont to feel when truly pregnant, although she had never paid any particular attention to these differences so long as she believed the sensations to be due to the stirring of a child within her womb. There is, I say, usually some irregularity in the form of some one or other of the leading individual symptoms, although the combination of them all apparently in perfection is at first very striking and extremely puzzling. You must make up your minds to meet, in many cases in the most distinct form, with some of the single symptoms which are looked upon as the most characteristic, and which are ordinarily supposed to be conclusive and incontrovertible evidences of the occurrence of impregnation. Thus the *mammæ* may undergo all the usual changes which occur in these glands during pregnancy, as happened to a very marked degree in the case of a patient whom I had under my care many years ago with a retroversion of the uterus. This lady came to present almost all the symptoms of pregnancy, and the changes in the breasts, in particular, were extremely well marked. The *mammæ* swelled; their *areolæ* were darkened in color and extended; the cutaneous *papillæ* became more pronounced, and the superficial veins enlarged and prominent. The lady, as it happened, was an excellent artist, and she made a sketch for me of the appearances presented at this time by the *mammæ*, making use of a mirror for the purpose. Dr. Radford, of Manchester, was in Edinburgh at the time, and saw the patient along with me. But I could not make out any enlargement of the uterus itself; and some of the other symptoms were not well marked. By-and-by, all the constitutional phenomena of pregnancy vanished, and thus showed that the pregnancy had only been a spurious one. Afterwards the same patient became really pregnant, and again she made a drawing of the appearances presented by the breasts, which were not a bit more tumid, and the *areolæ* of which were not a bit darker in shade or wider in extent, nor their cutaneous glandular follicles more enlarged than they had been when she labored under spurious pregnancy. One symptom connected with the mammary symptoms which is often present, and often greatly deceives, is the secretion of a serous, milky, or milk-like exudation, from the nipples. In some women, but not by any means in all, there is formed a milky secretion in the *mammæ* during utero-gestation; and sometimes even in the very early months of that state. When the *mammæ*, or rather the nipple and its vicinity, are compressed with the fingers, a portion of thin,

serous-looking, lactescent fluid, escapes from the orifices of the milk-ducts, or it exudes spontaneously and without pressure, and on examining it with the microscope you will see the usual characteristic milk globules in it. But I have seen these colostrum globules with the microscope in a case of spurious pregnancy as distinctly as they were ever seen in a case of true pregnancy. But marked and striking as these various changes of the mammæ in spurious pregnancy thus sometimes are, you will find that here, too, there is liable to be some irregularity in the symptoms. The secretion of the gland is not set up, or the enlargement of the mammæ is only slight or partial, or the darkening of the areolæ is not very deep or decided, or the glandular follicles of the areolæ are not correspondingly enlarged. Sometimes all the more usual phenomena of pregnancy are present in pseudocyesis, and each of these phenomena so far a perfect imitation of the same phenomena in the true state of utero-gestation; but their spurious character is brought out when you inquire into the order or succession in which these phenomena have appeared. Thus the patient sometimes observes the swelling of the abdomen or the quickening of the child before the suppression of the menses, and this inversion of the order of the symptoms at once puts you on your guard, and makes you more careful in your inquiries. Again, if you find a want of correspondence among the symptoms of pregnancy described by your patient, it will equally make you suspicious of her state; as, for example, if she spoke of having had the catamenia suppressed for six or eight months, and the feeling of quickening present for three or four months, and yet the mammæ were not enlarged, nor their areolæ and nipples in any corresponding degree altered and changed.

Again in pseudocyesis the liability to deception is greatly increased, and the difficulty of making a true diagnosis of the disease is often augmented by the imitation or repetition in cases of spurious pregnancy of individual peculiarities and special phenomena presented in former real pregnancies. Let me try to impress this fact upon you by stating some instances of spurious pregnancy in which there was presented such a

Repetition of Special Idiosyncracies,

seen in previous true pregnancies in the same patient. Some women, as you are aware, are subject, during the course of utero-gestation, to peculiar discolorations or eruptions on parts of the skin; others to neuralgias in various situations; others, to increased secretion of some of the glandular organs;

and others to the most remarkable changes in temper and habits. Indeed, there is no limit to the number of peculiar physical signs and functional changes which may be presented by women when pregnant; and when these come to be repeated in the successive pregnancies of the same individual—as is very frequently the case—they may very legitimately be looked upon—and frequently, indeed, they are regarded—as indices of the existence of that condition. But when such a patient happens to be affected with spurious pregnancy, this peculiarity may be repeated, and is then very likely to mislead alike the patient herself and the practitioner into the belief that the pregnancy is a real pregnancy.

Several years ago I saw, along with the late Dr. Taylor, a lady who showed all the usual symptoms of pregnancy; and who, at the same time, was covered over the greater part of the body with a papular eruption, such as she had invariably had in all her previous pregnancies, and never at any other period. Yet on a closer examination of that patient she was found not to be pregnant at all; and the eruption, as well as all the other sympathetic changes, was only symptomatic of a state of pseudocyesis. I have seen a case of spurious pregnancy which was peculiar in this respect, that the subject of it had in her successive real pregnancies been troubled with a profuse salivation, which was reproduced along with the other changes in the spurious affection. I saw once a very singular case of spurious pregnancy, where a lady who had previously given birth to eight children, passed one period, and naturally thought she had again fallen in the family-way, because the breasts enlarged and began to secrete milk, while the abdomen became prominent, and she felt movements resembling those of the foetus. On examining the uterus I found it to be perfectly normal, and only slightly ulcerated around the os; but the lady herself was firmly convinced that she was really pregnant, because, in addition to all the symptoms I have mentioned, she presented this further very peculiar one, that she lost great quantities of hair, and she had always had such a falling out of the hair in her previous pregnancies. This patient, let me just add, had a similar but less decided attack of spurious pregnancy before the birth of her third child. At the famous Gardner peerage trial, a woman, who followed the occupation of a monthly nurse, testified that she could always be perfectly certain of the exact date of her pregnancies, from the fact that she fainted whenever quickening took place. Dr. Reid tells of this nurse, that she afterwards came to him as a patient, alleging that she was then seven months gone in the family-way, as she had fainted in the same way as she used to do,

and had afterwards felt all the usual signs and symptoms of pregnancy. But on making a more correct examination, Dr. Reid found that she had deceived herself, for she believed that she was so far gone in utero-gestation when she was only laboring under an attack of spurious pregnancy. But the repetition or reproduction in an attack of spurious pregnancy of the exceptional and aberrant phenomena of real pregnancy does not end here. I have told you, that a case of spurious pregnancy may end in a kind of spurious parturition, the patient showing all the usual indications of being in labor; and in such a case, if the patient happens in previous real labors to have presented any special and peculiar phenomena, these are liable to be again produced in the course of the spurious parturition. Thus, Klein reports the case of a patient who had always been the subject of convulsions when in labor, and who became the subject of an attack of spurious pregnancy, ending at the usual period in a kind of spurious labor, which was also complicated with convulsions.

But, I repeat, however closely all the ordinary symptoms of real pregnancy may be represented and simulated in the spurious affection, and however minutely even the individual idiosyncrasies sometimes seen in the former may be imitated in the latter, there is usually some deviation from the ordinary course of events, and some difference in the character, order, or correspondence of the ordinary phenomena, which may serve to put you on your guard, and lead to the discovery of the true state of affairs. Such deviation or difference, however, is generally not of itself sufficient to enable you to decide upon the nature of the case, and you can only be sure that you have to do with spurious pregnancy by having recourse to the aid of

PHYSICAL DIAGNOSIS.

For this purpose you may avail yourself of the assistance of, 1. Auscultation; 2. Percussion of the abdominal swelling; 3. Of tactile examination of the uterus; and, 4. Of relaxation of the tense abdominal walls by the use of chloroform or other anæsthetics.

1. *Auscultation* affords in pseudocycsis only negative results, or ought only to afford such. But I have seen more than one case of the disease in which the Practitioner—perhaps led astray by the strong assurances and fervid belief of the patient herself—has imagined that he heard something like the sounds of a fœtal heart, where there was no fœtus present to produce any such sounds. Several years ago I had a lady placed under my care from a neighboring part of the

United Kingdom, in whom a physician—who had written a work, and a very excellent work, too, on Auscultation in Pregnancy—fancied he had heard, three or four months previously, the sounds of a foetal heart; and, though all due preparations were made, no child was born. It was nothing but a very marked instance of pseudocyesis. It is only necessary for me now, I believe, in the present advanced state of stethoscopic study and practice, to mention the possibility of such an error, in order to guard you against the committal of the error itself.

2. *Percussion of the Abdomen* is generally a most valuable means of diagnosis in the discrimination of pseudocyesis. By its aid you can often arrive at an almost absolute certainty as to the spurious nature of the pregnancy. When the abdomen is swelled up and made prominent from the distension of the bowels with gas, you of course obtain a resonant and even tympanitic sound on making percussion over it; whereas, as you all know, the sound is perfectly dull when the prominence is due to the enlargement of the gravid uterus. But sometimes percussion is painful from the over-sensitive state of the abdominal surface and walls, and sometimes the amount of fat deposited in these walls, and in the omentum—especially in cases of pseudocyesis occurring towards the termination of menstrual life—diminishes the applicability and certainty of this diagnostic test. In these, and in other cases, you can usually surmount every doubt and difficulty which may exist by having recourse to the two remaining means of physical diagnosis which I have named.

3. *Tactile Examination* is usually indispensable in order that you may arrive at perfect certainty. In using it you must make a careful physical examination, both internally and externally, remembering that the result of that examination may be of the greatest importance, and a matter of momentous interest to the patient. On examination per vaginam you will feel that the os and cervix uteri are small, and you can make out pretty well that the uterus itself is moveable. But there is a greater difficulty than usual in judging of the size of the body of the organ in such a case. You can often derive great assistance in making your diagnosis of various morbid conditions of the uterus by applying one hand to the fundus externally through the abdominal wall, while you apply one or two fingers of the other hand to the cervix internally through the vagina, for thus you can catch the uterus between the two hands, so as to define and determine exactly its degree of enlargement. And if in any case of spurious pregnancy, by feeling the uterus simultaneously with both hands, we can thus measure its size and make out that it is of nearly normal

dimensions, or at least not by any means enlarged to a degree commensurate with the alleged date of utero-gestation, we have a most decisive evidence of the true nature of the affection. Recollect, further, in making this tactile examination of the uterus, that the organ is sometimes in some degree enlarged in pseudocyesis, without there being any disease in it; that the organ may be enlarged also, and to a great degree, from fibroid tumors and other organic causes, a combination with pseudocyesis, of which I have seen several examples in practice; and above all, that retroversion or retroflexion of the non-pregnant uterus often co-exists with pseudocyesis, and often leads to the supposition that the uterus is increased in size, when the apparent increase is merely produced by displacement of the viscus. But in some cases of spurious pregnancy it happens that we cannot succeed in making a perfect and satisfactory tactile examination at all; and why? Because the abdominal walls may be, and often are, naturally thick, the subcutaneous tissue being filled with fat; but, independently of that, there is in many of these cases a firm unyielding swelling of the abdomen, which you might suppose to be due to the enlargement of a gravid uterus, but which is in reality due to a tympanitic state of the bowels, and a peculiarly tonic condition of the abdominal muscles; and the abdominal walls are so firm and tense, and resist the pressure of the hand so effectually, as to render it utterly impossible for you to make out the size and contour of the uterus. Now, how are these obstructions to be overcome? Very simply, by the use of anæsthetics.

4. *Chloroform* will generally, in any case of doubt, solve the difficulty completely, if only given deeply enough. When the patient is fairly put to sleep with chloroform the tense abdominal muscles become perfectly relaxed, and on pressing on the abdomen, you will find that the walls will give way before your hand, and sink backwards till you can feel the spinal column quite distinctly, and you then find the uterus to be of normal size. The phenomena presented by that phantom tumefaction of the abdomen while the patient is being anæsthetised are very singular. When the patient lies down on her back, and the abdomen is uncovered, it is seen to be projecting, swollen, rounded, and defined, like the abdomen of a pregnant woman; but generally, as I have said, with an appearance of unusual constriction around the lower edge of the ribs. No change occurs during the first stage of the administration of the anæsthetic, and until the period of excitement has passed over, the swelling continues, and the muscles remain rigid and tense as at first; but gradually as that stage passes off, and the respiration offers to become sonorous, the

muscles begin to be drawn in, and the abdomen slowly flattens, until it assumes its proper size, or even becomes depressed and relaxed, like the abdomen after delivery. So long as the patient remains in a deeply anæsthetic state, you can make the most complete and satisfactory examination of the state of the uterus, and, indeed, of all the abdominal organs; and you may have recourse to this expedient with perfect safety and success in doubtful cases of real pregnancy also. But when she comes out of her sleep again, in a case of spurious pregnancy, the muscles begin to arch up and to become tense as before, so that by the time the patient is fully awake the abdomen is as large and rounded as ever, and the necessary examination again becomes painful. For, as I have already hinted, the patient has sometimes in pseudocyesis a degree of tenderness in the abdomen that renders her very intolerant even of a slight amount of pressure. The patient having wakened up and found the apparent tumor still present, fails herself to be convinced of the fact that it had, for a time, been dispelled. But you may, perhaps, convince some of her friends of the absence of any real tumor, and their corroborative assertion may go far to bring her to a sound and proper belief afterwards. I had once a poor peasant's wife, from Berwickshire, with spurious pregnancy, who bothered all her friends, and kept them in a state of continued anxiety and trouble, because she was always going into labor, until she had arrived at a period which corresponded in her reckoning with the thirteenth month of utero-gestation. She was one of those persons whom it was utterly impossible to convince by any argument of the true nature of her affection; and her great confidence in the reality of her pregnancy had imposed on her friends, and led them for long to share in her kind of monomania,—for, after all, the mind is really in such a morbid state in some of these cases as to deserve the name of monomania. Having put her under the influence of chloroform, I called her sister into the room, and made her feel the spine through the collapsed abdominal walls, and succeeded thus in demonstrating to her entire satisfaction that there was no child in her sister's abdomen. But the patient waking up, and finding no change in her condition and form, might have remained unshaken in her belief, and, indeed, was still for stoutly affirming that she was pregnant, when her sister shut her up with, "Haud your tongue, woman! You've naething in your wame, for I felt your backbane myself with my ain hand!" I have no very satisfactory explanation to offer you of the nature of this very strange abdominal swelling, and of the peculiar phenomena observed in it, when the patient is in a state of anæsthesia.

Some years ago I made a number of observations on some of our hospital patients, to try and solve the difficulty. Some medical friends who had been told of the remarkable effect of the chloroform were quite certain that the swelling must have been due to distension of the bowels with gas, which, they averred, must have escaped unobserved when the sphincter was relaxed during the deep sleep induced by the drug. But that this was not the proper explanation we easily proved by introducing a tube into the rectum, and putting the free end of it under water, and then finding that no bubble of air escaped during the anæsthetic subsidence of the swelling. I believe that the phenomenon most probably depends on some affection of the diaphragm, which is thrown into a state of contraction, and pushes the bowels downwards into the abdominal cavity. I am the more convinced that this is the true explanation, from the fact that you can sometimes make the abdominal swelling disappear for a second or two, by getting the patient to take a deep inspiration, and then suddenly breathe out again. But whatever be the explanation, the value of anæsthesia as an adjuvant in aiding and establishing a correct diagnosis of such cases cannot be overrated.

PROGNOSIS, PATHOLOGY, AND TREATMENT.

Gentlemen,—My last lecture was devoted, as you may please to remember, to the consideration of Spurious Pregnancy or Pseudocycosis, a form of disease which, as I then told you, is in its more complete, but especially in its interrupted or fragmentary forms, by no means rare in practice, and oft-times very puzzling to the practitioner. Until you have met with a model case, and perhaps been deceived by it, you would hardly believe how readily you might be led into the mistake of making a false diagnosis. To show you how far the deception may sometimes go, let me state that a lady came to me from the country a few days ago with pseudocycosis, and bringing with her a letter from her medical attendant, a highly experienced and intelligent practitioner, who writes me that all the symptoms of pregnancy were at one time very decided, and that he even made himself believe he heard the sounds of the foetal heart on applying the stethoscope to the patient's abdomen. Such a mistake might easily be made by any of us, and the possibility of its occurrence may serve to impress upon your minds the importance of studying and making yourselves practically familiar with all the various means which are likely to enable you to obtain a clearer insight into the nature of the affection. In continuing this subject, now, let me say a word or two, first of all, as to the prognosis of the disease.

THE PROGNOSIS OF THE DISEASE.

Spurious pregnancy does not always run a defined and determinate course, and the period of its existence differs in different cases without our being able to assign any particular cause for the variation.

1. The symptoms may all be more or less fully established, and go on unintermittingly for a few weeks or months, and then suddenly break down and disappear. There is a cessation or abortion, as it were, in the course of the disease. In pseudocycosis among the unmarried, this is, perhaps, its most common mode of termination.

2. The symptoms may continue for the space of nine months, and the delusion that a real pregnancy is running its normal course may be kept up till the end of the usual period of utero-gestation, when the series of the phenomena of simulated pregnancy may be concluded by the development of the phenomena of simulated parturition; or, what occurs far more frequently, the disease may be brought then to a more or less speedy termination without the production of any such symptoms.

3. In some cases the train of symptoms goes on unintermittedly even after the patient has passed the ninth month of her supposed pregnancy, and does not break up till she has reached the tenth, fourteenth, or eighteenth month. I saw a patient to-day who knows that she is laboring under spurious pregnancy, and who has felt movements which she supposed to be foetal for fourteen months. There is another patient coming occasionally to my house at present, with well marked symptoms of spurious pregnancy, in whom I amputated the cervix uteri some twelve or fourteen years ago, and who since that period has never borne any children, but continued to menstruate regularly up to about eleven months ago. Nine months since, she came to me believing herself pregnant, but as the uterus was quite empty and only somewhat retroverted, I assured her that she was not in the family-way at all. A month ago, however, she returned, averring that I must have been mistaken, because soon after the date of her previous visit, she had begun to feel the movements of the child, which still continued very vigorous and distinct. She owned, certainly, that the movements were peculiar, and situated much higher up under the diaphragm than she had ever felt them in her real pregnancies, and on examination the uterus was found to be in exactly the same condition as it was nine months ago. Under the use of some of the remedies, of which I shall have to speak immediately, her symptoms have begun gradu-

ally to disappear. She is still inclined to aver that there is a child there, and that the child's movements are now lower down in the abdominal cavity, and she still retains a lingering expectation that she will soon be delivered; but her faith in the genuineness of the pregnancy has been materially shaken, and is slowly giving way.

4. The duration of the disease may not be limited by months, for the series of symptoms may continue, and the delusion be kept up for years. I have seen patients living in the belief that they were pregnant, and deluding themselves with vain hopes for long periods, frequently making preparations for their approaching confinement, and still persisting in their belief after oft-repeated disappointments. I have seen the disease go on in this way till the patient's mind became unhinged and she became incurably deranged. There is a lady in an asylum in the neighborhood of this city who avers that she has inside her a child, which, according to her reckoning, must now have attained the age of, at least, ten years; and the last time that I had occasion to be in that institution, I saw that lady, and was favored with the old announcement that she was to require my services very soon now. Such cases are, happily, extremely rare; but you do meet with them occasionally, and not in patients within the walls of a lunatic asylum only. It is told that a lady once came to Dupuytren to ask what was to be done in her case, as she had now been in the family-way for fourteen years,—and the great Parisian surgeon gave it as his opinion, that as the boy must be tolerably well grown by that time, the best thing the lady could do was to swallow a tutor immediately, that his education might not be neglected!

PATHOLOGY OF THE DISEASE.

The question as to the pathological nature of this peculiar form of disease is still involved in great obscurity. On making a local examination of the organs of generation, with the expectation of discovering in them the source of all the other changes, we may find these organs in very different states in different cases.

First. We may find the uterus and ovaries affected by some common form of disease. Not unfrequently the uterus is felt to be hypertrophied and engorged; or it may be in a state of anteversion or retroversion; more frequently still, perhaps, there is some degree of ulceration; or some form of eruption on or around the os and cervix; or a slight degree of inflammation in the body of the organ. Or the ovary may be en-

larged, or otherwise morbidly affected; as in one of the most perfect cases of spurious pregnancy I ever saw, where the series of symptoms seemed to have taken their origin in an abscess of the ovary. But,

Secondly. Far more frequently we find no trace of uterine or ovarian disease whatever, so that when we do meet with morbid states of the uterus and ovaries as complications of spurious pregnancy, we can hardly recognize them as essential causes of pseudocyesis, but must rather regard them as coincidences; and this all the more, when we recollect how common such diseases are among women who present no such sympathetic constitutional phenomena at all.

Thirdly. When observed in the lower animals, spurious pregnancy has been remarked to occur within a certain period after the time of heat, and to be distinctly connected with that condition; so that in them it is most probably dependent on the physiological change or changes which are at that time set up in the uterus and ovaries. Menstruation in the human female, as you know, corresponds to the phenomenon of heat in the lower animals; in as far, at least, as the process of ovulation and the ripening of a Graafin vesicle is concerned; and I believe that the aggregate of symptoms which we class under the designation of "spurious pregnancy" in women is in some way or other dependent upon the changes which occur in the ovaries and in the uterus at the period of menstruation. When the irritation associated with the normal or physiological changes in these organs is somewhat excessive either in degree or in duration, and is repeated from month to month, the sympathetic phenomena excited at one period have not had time, in some instances, to subside before a new stimulus is supplied for their continuation by the recurrence of the menstrual molimen. True pregnancy occurs when the ovulum which escapes from the Graafin vesicle duly meets within the mother's body with male spermatozoa, and as a consequence, a long nine-months' series of local and constitutional phenomena immediately begins to be set up. But the same series of constitutional phenomena, at least, is set up in cases of pseudocyesis when an ovulum escapes, or a reproductive nismus occurs, without any male spermatozoa being present; these phenomena occasionally ending, as we have seen, at the usual extreme term of utero-gestation, in a simulated parturition, or in a kind of *Lucina sine fœtu*, just as in some cases, as among the unmarried, they commence by a kind of *Lucina sine concubitu*, to borrow the language of the old physiologists. Experimental physiology, or experimental pathology, if you choose rather to call it so, might probably throw some

light upon the subject. It is, at all events, extremely probable that careful observation of the phenomena of the disease as they occur in the lower animals, and a minute examination of the generative organs of some of them, which have been killed when in this state, might lead to the discovery of some appreciable and perhaps morbid condition of these organs which would serve to explain the peculiar phenomena of this disease. Perhaps we would find the *corpora lutea* under such circumstances, tending at least to simulate in their development and growth the *corpora lutea* of pregnancy. Pseudocycsis, let me again, in conclusion, repeat, though it may sometimes be found to be associated with, and to be exaggerated and continued by uterine or ovarian disease, yet it is not so necessarily or even most frequently; and, further, the local disease which is present may be of the most variable description. So that, on the whole, the disease would seem to depend rather on some disturbance of the ordinary function of the generative organs than on any organic disease of these organs attended and attested by organic changes in their intimate anatomical structure.

TREATMENT OF THE DISEASE.

But although, as pathologists, our knowledge of the nature and causes of pseudocycsis is so very limited and so very vague, as practitioners, fortunately, we can do a great deal towards moderating the symptoms and modifying or arresting the course of the disease. For in almost every case there are some indications for treatment clearly presented to us, and by skilfully fulfilling these, we can often succeed in cutting short and dispelling the whole of the phenomena. The principal indications which we require to look to are the following:

I. *Raise or Restore the Standard of Health.*

You will find that many of the patients affected with spurious pregnancy are in a state of impaired general health; and, independently of the nausea and vomiting which form part of the special symptoms requiring special treatment, they frequently suffer from indigestion and are often very hypochondriacal. When such is the case, you will give material aid to the action of more specific remedies, and do much towards the cure of your patient, by the administration of bitter vegetable infusions, and of such tonics as may seem to you to be best fitted in each particular case to increase the general tone and vigor of the patient's constitution.

II. *Counteract or Cure any existing Uterine or Ovarian Disease.*

Though this indication may not require to be fulfilled in the majority of cases of spurious pregnancy, seeing that in most you find, as I have said, no disease of the uterus or ovaries at all, yet when such diseases are present, it becomes a matter of paramount importance to employ all the usual remedies adapted for their cure; and that not because these diseases are of themselves sufficient to lead to the development of spurious pregnancy, but because the irritation they excite in the generative organs, play an important part, if not in the production of that malady, at least in its continuance, and must be counteracted and controlled by all appropriate means. When the os uteri is ulcerated, we must promote the healing of the sore by the ordinary means and applications; when the organ is inflamed acutely, or as it more frequently is, subacutely or chronically, we must apply leeches and counter-irritants, and employ the various anti-phlogistics; and so on with all other forms of disease of the uterus or ovaries that may happen to complicate any particular case.

III. *Administer Uterine and Ovarian Sedatives.*

Perhaps the most important indication that presents itself for fulfillment in every case of pseudocyesis, is to diminish or dispel the irritation which we suppose in almost every case to have been set up in the uterus and ovaries, and which we believe to be the immediate exciting cause of all the other phenomena of the disease. Where this irritation is produced by, or connected with, any recognizable morbid condition of the organs of generation which is amenable to treatment, you must, as I have just stated, have recourse to all the usual remedies for the cure of that morbid state, in the hope that as the local disease is cured, the symptoms of pseudocyesis may subside. But where there is no form of appreciable organic change to be detected, as is the case, I again repeat, in the greater number of instances, and where there seems to be merely some functional disturbance attended with irritation or excitement of the uterus and ovaries, then you must have recourse to the use of remedies which are likely to act as direct sedatives of the generative organs. But you may ask me, Have we any such remedies? To such a question I am inclined to reply by stating that I believe we have remedies of the kind indicated in the bromide

and the iodide of potassium. I know, at all events, that by the administration of these drugs, and particularly by the administration of the bromide of potassium, I have often succeeded in cutting short the disease, and in causing the train of symptoms to be suddenly broken down, after they have been in existence for a few months only, instead of allowing them to go on and annoy the patient till the completion of a period corresponding to the usual term of utero-gestation, or even for a greater length of time; and this striking effect of these remedies I am disposed to attribute to some specific sedative action exerted by them on the uterus and ovaries. And there are other facts known with regard to the use of these drugs, which go far to confirm the idea that they are possessed of such an action as I refer to. It is on this supposed action, for example, that Sir Charles Locock founds his recommendation of the bromide of potassium for the cure of epilepsy connected with menstruation. There is, as you are aware, a form of epilepsy which is liable to attack females, and more particularly young girls who have just reached the age of puberty, and who become subject to an attack of epilepsy immediately before, during, or after the recurrence of every menstrual period. The onset of the epileptic fit seems to be directly connected with some obscure kind of irritation set up at these periods in the organs of generation; and according to the experience of Sir C. Locock and others, this type of disease, which rarely yields to any other mode of treatment, may sometimes be cured by the use of bromide of potassium, which probably acts by quieting the excitement of the uterus. From these, and such-like observations as to the action of the bromide of potassium on the uterus, I was first led to try the effect of it in cases of spurious pregnancy; and from what I have seen of its efficacy in these cases, I can recommend you very strongly to have recourse to its administration. Give five or six grains of it three times a-day, either alone, or with the addition of from two to three grains of iodide of potassium, and I feel certain that you will often succeed in checking the progress of the morbid symptoms, and so in relieving your patient's mind of much anxiety, and in saving her much needless trouble and prolonged distress. The remedy, let me add, has this further recommendation, that it often proves a good tonic, so that its use is not contra-indicated by any constitutional debility on the part of the patient. The bromide of potassium, let me add, may also be applied locally to the uterus by having it made up in the form of a medicated pessary, and its action may then be aided or supplemented by the admixture of some other sedative, such as morphia or belladonna. Or you may employ other local seda-

tives. Thus I have sometimes attempted to allay uterine irritation in such cases, and more particularly where it was attended by, or amounted to, a certain degree of neuralgia, by the introduction of a stream of carbonic acid gas, or of that gas combined with the vapor of chloroform, into the vagina, in the manner I explained to you when treating of the palliative treatment of carcinoma of the cervix uteri. Sometimes, also, I have used leeches locally with a similar view. By the mere application in this way to the uterus of local sedatives you can never, perhaps, expect to produce such a powerful effect on that organ as will lead to a cure of the disease; but I believe you will often find them most useful adjuvants to the internal remedies. But besides attempting to arrest the whole train of morbid phenomena by this kind of radical treatment, there remains, finally, one more indication to fulfill, for you will be obliged in most cases to try, more or less, to

IV. *Reduce and relieve the individual symptoms.*

The two symptoms which chiefly call for treatment in the course of the disease, are, first, nausea and vomiting, which are often as persistent and prostrating in cases of spurious as in cases of genuine pregnancy; and, secondly, tympanitis, which often gives great annoyance from the persistent attendant increase in the size of the patient.

a. Treatment of the Nausea and Vomiting.—The sympathetic sickness and vomiting of real pregnancy are, as you know, sometimes, though happily very rarely, so alarming and unmanageable as to oblige us to sacrifice the existence of the embryo to save the life of the mother by procuring abortion. Yet our treatment of symptoms which are thus occasionally so distressing and formidable, is in every instance of an altogether empirical nature, and when the same symptoms occur to such a degree as to call for treatment in any case of spurious pregnancy, they must then also be met by means which are purely empirical. It is just possible, indeed, that if by the application of leeches to the uterus and counter-irritants to the sacrum, aided by the employment of various antiphlogistics, we succeed in subduing some co-existing metritis,—or if, by other appropriate means, we effect a cure of any other co-existing disease of the uterus—our treatment may, at the same time, have the effect of subduing the concomitant sickness. Or the internal administration of bromide of potassium may, perchance, fulfill at the same time the double indication of diminishing the uterine irritation, and dispelling the sympathetic nausea and vomiting. But where this combination of

secondary symptoms, namely, nausea and vomiting, really occurs to such a degree as to prove distressing to the patient, as it not unfrequently does, it then demands some specific treatment, and, if one or two methods fail, you may require to put your patient through a course of many different medicines, and to ring the changes on all the drugs that are usually found to act most powerfully and certainly as sedatives of the stomach, before you meet with ultimate success. Sometimes you can moderate and remove this sympathetic nausea and vomiting by regulating the diet of the patient with some degree of strictness, and especially by giving food in small quantities and often, instead of loading the stomach with a large meal, and desiring her to take everything cold, or even iced. External counter-irritation over the stomach is prescribed by some physicians, and others advise us to apply morphia, etc. to such a surface when the cuticle has been removed by blisters. The internal remedies which are used for allaying nausea and vomiting, whether these phenomena be secondary and sympathetic, or directly due to some disease or disorder of the stomach itself, form a class comprising many and very different drugs; but from their very number and variety you may learn how uncertain each one of them is, and how frequently you may be baffled and obliged to try one after another before you succeed in relieving your patient. You can rarely, if ever, tell at first what remedy will prove successful in any particular case, and you must be prepared, when disappointed with the effect of one, to have recourse to the administration of some other form of sedative. In many cases - you will very naturally have recourse, in the first instance, to the use of that most generally efficacious of sedatives—opium. You may administer it, for this purpose, in any of the multitudinous forms of the drug, but always in very small doses corresponding to a fourth, a third, or a half of a grain of the solid opium. It may be given alone; and, perhaps, no form of it is more convenient or more agreeable to the patient than solid opium in the form of a very small pill; or it may be given in the form of powder combined with some other simple sedative, such as the sub-nitrate of bismuth, or that other preparation of bismuth which is now coming into fashion, and which is supposed to be more certain and speedy in its action, inasmuch as it is more easily soluble in the juices of the stomach—I mean the carbonate.

But there are many patients with whom opium in every guise and in every combination disagrees, and its use is here attended with this further drawback, that it tends to produce or keep up constipation of the bowels, which is one of those

symptoms which you are called upon to control. The vomiting may often be checked and the nausea abated by the administration of one or two drops of prussic acid given in a tea-spoonful of water, or in some syrup. When other means have failed, you may sometimes succeed in fulfilling the same indication by the use of two or three drops of naphtha, administered, perhaps, in a tea-spoonful of the tincture of hops, which is certainly a very disgusting mouthful, but sometimes apparently of essential service in different kinds of vomiting. The chief objection to the use of this remedy is its disagreeable taste; and this objection holds good also in the case of creosote, another supposed potent and kindred anti-emetic. In administering any of the remedies to which I have referred, you will do well to combine them occasionally with some of the ordinary carminatives, with the view at once of obtaining the effect of that class of medicines, and of covering the unpleasant taste of the special remedy. A less disagreeable agent, or rather, one whose use is positively pleasant, is carbonic acid gas, which is frequently efficacious, and which is always easily procurable. The only caution to be observed in its employment is that you must give it in moderate quantities, and not to such an amount as to produce over-distension of the stomach. You have it always at hand in champagne, soda-water, and the various aerated drinks, or you may order it in the form of an old and celebrated remedy once very extensively employed and known as the anti-emetic "portion of Riverius," which was a draught composed of a solution of a scruple of salt of wormwood (or carbonate of potass,) mixed with a table-spoonful of lemon-juice. Effervescing wines are sometimes useful in small doses, both as containing carbonic acid, and as gentle stimulants when the latter are required. Again, you will find that swallowing frequently small pieces of ordinary block ice is often of very great avail in checking vomiting and allaying sickness; and I would recommend you in particular to have recourse to this remedy whenever the patient is at all feverish, or when she suffers from thirst. Salicine is at present, I believe, a favorite remedy with some English physicians, and is frequently prescribed with success, in the form of a pill, powder or solution, containing two or three grains of salicine to be taken three or four times a-day. From the class of metallic bodies we derive a number of remedies which are of essential service in cases of sympathetic vomiting. Such are the nitrate and oxide of silver, which, as well as the preparations of bismuth to which I have already alluded, have long been regarded and employed as amongst the most valuable agents we possess in many forms of the affection. In ace-

tate of lead you have another therapeutic agent of occasional value as an anti-emetic, although it is more known and esteemed for its many other important medicinal virtues, than for the property which it possesses of allaying irritability of the stomach and sympathetic vomiting. Some fifteen or sixteen years ago I saw a case, in consultation with the late Dr. Abercrombie and Dr. Argyle Robertson, where the patient, who was in one of the early months of pregnancy, suffered from vomiting to such a degree that she was utterly prostrated; and at last it was thought we should be compelled to induce premature labor, or rather abortion, to save her life. But on the suggestion of Dr. Abercrombie it was agreed before having recourse to this extreme measure, to make trial of the effect of acetate of lead, which was almost the only drug of the class that had not been administered, and, to our great delight, the result of the trial was that the vomiting was immediately restrained and finally checked by the administration of the drug. You may never be obliged to make such an application of this agent; but lest occasion for it should arise, it will be well for you to bear in mind this property of it. I have never seen the vomiting of pregnancy, whether real or spurious, assume the form of hæmatemesis, and I believe that such is an extremely rare occurrence; but I am certain you will excuse me, even although it may thus appear somewhat foreign to the subject in hand, if I take occasion here to inform you of the very striking and satisfactory effect which I lately witnessed from the use of a solution of perchloride of iron in glycerine in a case of vomiting of blood. The patient, whom I saw, in consultation with my friend Dr. Andrew Wood, had been vomiting up great quantities of coagulated as well as fluid blood, and a great many different remedies had been employed, but without any good result. Having had frequent experience of the effects of the local application of perchloride of iron in arresting hæmorrhage, I proposed that some should be introduced into the stomach, in the hope that by coming into contact with the blood at the vascular orifice, or orifices rather, from which it was escaping, it might lead to its coagulation there, and so prevent its further flow. Accordingly, after a severe fit of vomiting, by which the stomach seemed to be for the time emptied of its contents, the patient was made to swallow a tea-spoonful of the concentrated solution of perchloride of iron in glycerine, and from that hour to this, now several weeks ago, she has had no return of the vomiting. You need have no fear, I believe, of any bad consequences from the use of this remedy; at least, I know from experience that a much larger dose than that which I have indicated may be

given with perfect impunity. For having had occasion once to carry to a patient's hotel some of the liquid to apply to leech-bites on the cervix uteri, which happened to bleed for an unusual length of time, I left the bottle of the liquid in the patient's room to use if the bleeding recurred. The lady's husband was at the time absent, but being an Englishman who believed that the prime duty of every practitioner was simply and purely to administer drugs, when he came in and was told that no medicine had been given, but that the doctor had left a bottle behind him, he savagely insisted on making his unfortunate wife swallow all its contents, about two ounces of perchloride of iron solution. I was horrified when I heard of what had been done; but, as it turned out, my alarm was groundless, for no bad effect whatever ensued, except that the walls of the patient's mouth felt for a time mercilessly puckered and pulled together.

I have thus named to you a variety of remedial agents, all of which, whether singly or combined, are more or less efficacious for the cure of vomiting; but I have not as yet said anything regarding the drug, which I have found to be, of all individual remedies, the simplest and surest agent that can be administered for arresting the sympathetic vomiting of pregnancy. The drug I refer to is oxalate of cerium, which I have seen successful in curing vomiting in a larger proportion of cases than any other single remedy which I have used; and its good effects are not confined to the forms of vomiting which depend on the sympathetic derangements of the stomach caused by changes, functional or pathological, in the uterus or other organs, but are manifested also in those forms of the disease which are due to different morbid conditions of the stomach itself. Cerium is, as you know, one of those rare and little-known metals which were first discovered in the early part of the present century, and is found chiefly in the Scandinavian mines, combined in small proportions in various minerals. I believe that any of the other preparations of the metal would fulfill the indication equally as well as the oxalate, which is used simply because it is the most easily procurable salt of cerium in the market; oxalic acid being used to separate the cerium from the metal with which it is most generally combined in nature, namely, didymium. The action of cerium on the stomach seems to be that of a sedative tonic, resembling in some degree the action of the salts of silver, and bismuth; and I have seen it succeed in curing the most obstinate cases of vomiting so much oftener, and so much more speedily than any other remedy, that I have come of late to have great faith in its employment. I would not lead you to suppose that by

the administration of a quantity of oxalate of cerium you will succeed in curing every case of vomiting, or even in alleviating it in every case; but I am certain that you will find the remedy successful in a larger majority of instances than you will find any other one drug. You may give one or two grains of it, three times a-day or oftener, in the form of a pill, or mixed with a few grains of gum tragacanth, in the form of a powder. The vomiting usually ceases after a few doses have been taken; but in some cases it does not abate till the remedy has been persevered with for several days. The effect is sometimes instantaneous. I had a patient some time ago from the west of Scotland, and when her husband first came to ask me to visit her I was engaged and could not go, but after hearing his account of the case, I gave him a prescription for cerium pills, which I desired him to administer to his wife till I could get to see her. He came back next morning, asking what the medicine was which I had given him, for the effect of it had been like magic. The vomiting, which had been going on almost incessantly, and which nothing seemed to have any power of alleviating, ceased upon the administration of two doses of the cerium. In a previous pregnancy in this patient it had been made a question for a medical consultation whether abortion should not be induced, to save her from the effects of uncontrollable sickness and vomiting. But the good result is, unfortunately, not always so immediate. One of the earliest cases in which I employed it was in the case of a lady who came from Greenock, when she was pregnant for the fourth time, and had arrived to between the third and fourth months of gestation. For these three or four months she had been always vomiting many times a day, and often during the night also; and that, whether the stomach was empty or full. She could take but very little food, for she always sickened at the sight of it. It had been the same in all her former pregnancies; and on the occasion of the first of them the vomiting was so severe as to bring on a miscarriage, and the patient's own life was despaired of. She got, first of all, one grain of oxalate of cerium, but vomited three hours afterwards. She was then told to take a grain every three hours for a day, and afterwards one grain thrice a day. This was successful in checking the vomiting, and a few days afterwards she left Edinburgh, feeling quite well, eating her meals heartily, and free from all sickness. Every thing had been tried by different medical men in the West which afforded any prospect of relief, as creosote, prussic acid, bismuth, lime-water, ice, champagne, opium, blisters, etc., but all without effect. The only thing from which she ever

experienced any benefit, and that was only very transient and temporary, was calcined magnesia. Yet, as I have told you, it required only a very few doses of oxalate of cerium to produce a perfect cure. Shortly afterwards I saw with Dr. Craig, of Ratho, a case of severe and persistent vomiting in pregnancy, where he had tried every thing; but in vain. She, too, was cured by a few doses of cerium. When the propriety of entering this and other modern remedies in the new Pharmacopœia to be published by the Medical Council was lately debated, it was objected that so little of the drug is used that it is not worth while classifying it among the other recognised medicinal agents. But on making inquiry lately at the drug shop of Messrs. Duncan, Flockhart & Co., in this city, I was told that they had sold as much as sixty-four ounces during the preceding twelve months, and I feel assured that it only requires to be more widely known to make it more extensively esteemed and employed as a general metallic sedative tonic. But it is time that I should proceed to say a word or two as to the

b. Treatment of the Tympanitis. The enlargement of real pregnancy will be borne by most patients without repining, whereas the distension of the abdomen which forms one of the most deceptive and striking symptoms of spurious pregnancy, is a source of constant complaint; and you will frequently be called upon to do all in your power to relieve it. Although the phenomenon is in a great measure due, as I have already endeavored to explain to you, to a peculiar action of the diaphragm, as is shown by the flattening of the abdomen, which is seen when the action of the muscles is modified by the influence of anæsthetics; yet there is in most cases a physical cause which operates in some degree towards the production by continuance of the protuberance, and which you can, in some measure, overcome by means of medicaments—I mean, of course, flatulence. For this a variety of remedies may be employed, and perhaps there is none which you can use with more success than the ordinary compound galbanum pills of the Pharmacopœia, of which the patient should be made to take two, twice or thrice a day. Some physicians have faith in these cases in pills of ox-gall. The assafoetida pill is sometimes of great service, more particularly in those cases where hysterical symptoms are superadded. Some of the valerianates, such as the valerianate of zinc, may be administered with much advantage. Powdered charcoal used to be a favorite remedy with the late Dr. Abercrombie in many forms of flatulence; and a tea-spoonful of that powder administered three or four times a day often reduces the swelling more

rapidly than anything else, more especially in those cases where there is much flatus present. It acts probably in consequence of the well-known power which charcoal possesses of absorbing great quantities of gases. A bandage also will be found useful.

III. *William Shakspeare as a Physiologist and Psychologist.*

By A. O. KELLOGG, M. D., Port Hope, C. W. (From the American Journal of Insanity.)

THE extent and accuracy of the medical, physiological, and psychological knowledge displayed in the dramas of this wonderful man, like the knowledge there manifested on all subjects upon which the rays of his mighty genius fell, has excited the wonder and astonishment of all men who, since his time, have brought their minds to the investigation of these subjects, upon which so much light has been thrown by the researches of modern science.

The universality of Shakspeare's knowledge, extending as it did to subjects out of the range of all ordinary observation, and comprehending those which are in our day, and we may suppose were in his, considered strictly professional and special, has led many intelligent investigators and critics into the belief that these immortal works could not have been the offspring of one individual mind, and that, in the very nature of things, the man who wrote *Lear*, and *Hamlet*, could not unassisted have written the *Merchant of Venice*. This argument has been maintained with much apparent plausibility. Its fallacy, however, is rendered sufficiently apparent by the fact, that the knowledge displayed was very far in advance of the age in which he lived, and, as we shall have occasion to show, was not possessed by any one in his time, however eminent in any special department of science to which he might be devoting himself; and many facts not known or recognized by men of his age appear to have been grasped by the inspired mind of the poet, to whose acute mental vision, it would seem from his writings, they were as clear and certain as they have been rendered by the positive deductions of modern experimental science. This power of entering into the deep and hidden mysteries of nature and the universe—of lifting the veil, and drawing thence facts not yet manifested to the world, and perhaps not to be made manifest until after centuries of patient scientific investigation and deduction,—is

a characteristic of what has been termed poetic inspiration ; a power, we maintain, without fear of contradiction, more evident in the poet we have under consideration than in any other who has ever written in the English language, and perhaps it would not be unsafe to add, in any other, ancient or modern. This power consists, without doubt, first, of an extraordinary faculty for close observation, and an acute perception of the nature and relations of all things which come up before the eye and mind ; and in the second place, of a wonderful faculty, only possessed by a few such persons in varied degrees, of calling up at will from the recesses of the memory with great distinctness every perception there recorded, and of making such use of it as may seem fit.

Upon no subjects, perhaps, has this extraordinary faculty of the great dramatist been more curiously manifested than those we propose to consider in this connection, viz., physiology and psychology. In fact, we believe a very complete physiological and psychological system could be educed from the writings of Shakspeare—a system in complete accordance, in almost every essential particular, with that which we now possess as the result of the scientific research and experience of the last two centuries.

In the time of Shakspeare these sciences, like all others, were very imperfectly understood by men who devoted their lives to the investigation of them. Even the great discovery by Harvey of the circulation of the blood, which may be taken as the basis of all our present physiological knowledge, had not been given to the world ; for Shakspeare died in 1616, and the discoveries of Harvey were first published in 1623. Yet many passages from his dramas seem to indicate a pre-existent knowledge, on the part of the writer, of this great physiological fact. Falstaff, speaking of the influence of a good “sherris-sack” upon the blood, says :

“The second property of your excellent sherris is,—the warming of the blood ; which before cold and settled, left the liver white and pale, which is the badge of pusillanimity and cowardice : but the sherris warms it, and *makes it course from the inwards to the parts extreme.*”

Let us pursue further the physiological views of the fat knight, as set forth in the same famous encomium upon his favorite beverage, sack, in order to observe how strictly they accord with the universally recognized truths of modern physiology.

Speaking of Prince John, and contrasting him with his jovial friend Prince Henry, he says :

"This same sober-blooded boy doth not love me; nor a man can not make him laugh;—but that's no marvel, *he drinks no wine*. There is never any of these demure boys comes to any proof; for thin drink doth so overcool their blood, and making many fish-meals, that they fall into a kind of male green-sickness; * * they are generally fools and cowards, which some of us would be too but for inflammation. A good sherris-sack has a two-fold operation; it *ascends me into the brain*, dries up all the foolish, and dull, and crudy vapors which environ it; mak's it apprehensive, quick, forgetive, full of nimble, fiery, and delectable shapes; which delivered o'er to the voice (the tongue) which is the birth, becomes excellent wit."

We would not wish to be held responsible for the morality of all the views held by the worthy knight on his favorite subject of eating and drinking, but if this "tun of man" could again "revisit the glimpses of the moon," like the ghost of murdered Denmark, and once more roll his huge bulk from tavern to tavern in London, and in his nocturnal perambulations, guided by the light of Bardolph's red nose, should, by any accident, "roll" into a modern Exeter-Hall temperance meeting, he would be undoubtedly as much puzzled to know what constituted it, as he was in the days of his earthly pilgrimage, to "remember what the inside of a church was made of;" and if a modern Gough occupied the platform, he would no doubt be held up as a most pitiful example of one who had pushed his physiological views to the very extreme of physical endurance. We confess, however, that we would cheerfully give a very respectable admission-fee to hear the worthy knight argue the point at issue with the modern reformer, on pure physiological grounds, and give his reasons *why*, if "he had a thousand sons, the first earthly principle he would teach them would be to forswear thin potations, and addict themselves to sack." We assert, at the risk of being considered as anti-progressionist, or anti-teetotal, that much of the physiology set forth above by the worthy knight, is in strict accordance with the teachings of modern science; and though from its frequent abuse, as in his case, it may be looked upon as a dangerous admission, its truthfulness can not be denied.

In *As You Like It*, Shakspeare makes the old man Adam say:

"Though I am old yet am I strong and lusty;
For in my youth I never did apply
Hot and rebellious liquors to my blood."

By "hot and rebellious liquors" are doubtless meant such drinks as Canadian whisky and bad brandy, used to such a fearful extent in our day;—not the "excellent sherris" which

he puts into the mouth of Falstaff, which was a light Spanish wine. Shakspeare was too good a physiologist and moderate temperance man to teach that such "hot and rebellious liquors" as whisky and bad brandy are good for the blood of any healthy man. His works, as well as the imperfect history of his life, show that he was one of those moderate men whose physiological views were not pushed to extremes in any direction. Shakspeare contended for truth, not for the establishment of a moral theory; and modern science has demonstrated, moreover, that he has not gone very far astray in this matter.

Let us take a cursory view of some of the conflicting physiological doctrines maintained by eminent physicians, not only in Shakspeare's time, but long after, even down to the present century, when they were overthrown by modern scientific research, and replaced by a system which admits of positive proof, in order to observe whether the physiology of our own times, or that of the sixteenth century, best coincides with the expressed views of the poet. From the physiology of his own times it is quite evident that Shakspeare could have derived no assistance whatever. There was nothing which can now be regarded as approximating a correct scientific system. All that related to physiology or medicine was a confused, chaotic jumble of conflicting dogmas and doctrines, maintained by the rival sects of medical philosophers who flourished in his time. One sect, the Solidists, referred all diseases to alterations in the solid parts of the body, and maintained that these alone were endowed with vital properties, and were alone capable of receiving impressions from external agencies. Even the vitality of the blood was denied, and this doctrine has been maintained and was prevalent until quite recently. The Galenical physicians, the Humoralists, maintained, on the contrary, that all diseases arose from a depraved state of the humors of the organized body,—the blood, chyle, lymph, &c. It is scarcely necessary to observe in this place, that modern investigators have shown clearly that vitality is incident to both the solids and fluids of the body; that the blood is particularly concerned in all vital processes; that all alimentary substances, whether fluid or solid, are restorative or nutritious by virtue of the supply, after digestion, of certain principles necessary to the healthy vital condition of the blood; and that most medicinal substances act on the system after finding their way into the blood by absorption. Shakspeare appears to have been well aware of this great physiological fact, so strongly denied by many eminent physicians since his time, and even down to the present century.

Take the following for example, from King John, Act V., Scene VII. Prince Henry, in speaking of the poisoning of his father, says :

“ It is too late ; the *life of all his blood*
Is touched corruptibly ; and his pure brain,
 Which some suppose the soul's frail dwelling-house,
 Doth, by the idle comments that it makes,
 Foretell the ending of mortality.”

The peculiar action of certain poisons upon the blood, and their influence on the organ of the mind, through the medium of the blood, is here distinctly pointed out.

Again, the Ghost, speaking to Hamlet of the manner of his death from poison, says :

“ Thy uncle stole
 With juice of cursed hebenon in a vial,
 And in the porches of my ears did pour
 The leprous distillment : *whose effect*
Holds such an enmity with blood of man,
 That, swift as quicksilver, it courses through
 The natural gates and alleys of the body,
 And, with a sudden vigor, it doth posset
 And curd, like aigre-droppings into milk,
 The thin and wholesome blood : so did it mine ;
 And a most instant tetter bak'd about,
 Most lazar-like, with vile and loathsome crust,
 All my smooth body.”

The fact now demonstrated, that certain medicinal substances and poisons induce primarily a change in the condition of the blood itself, and in the second place a leprous condition of the skin, is here pointed out clearly by the poet. The syphilitic poison furnishes a good illustration of this fact.

Again, Romeo asks the beggarly apothecary for—

“ A dram of poison ; such soon-spreading gear
 As will *disperse itself through all the veins.*”

It is unnecessary to multiply quotations in illustration of the extraordinary amount of physiological knowledge possessed by Shakspeare. We have brought forward enough to show that on this subject he has anticipated the scientific discoveries and deductions of nearly two centuries, and we pass to the consideration of Shakspeare as a psychologist.

In relation to psychology, the wonderful prevision of the poet is still more astonishing to modern investigators. It was a remark of a late eminent physician to the insane, Dr. Brigham, that Shakspeare was, in himself, as great a psychological curiosity as any case of insanity he had ever met ; and he de-

clared that in the Asylum at Utica he had seen all of Shakspeare's insane characters. To suppose that Shakspeare obtained his knowledge of insanity and medical psychology from his contemporaries, or from works on these subjects extant in his day, is simply absurd, for there were none in existence worthy of mention, and all the ideas of his contemporaries were vapid and undigested. Yet, notwithstanding all this, after nearly two centuries and a half, we have little to add to what Shakspeare appears to have known of these intricate subjects. For his profound understanding of these and all other matters to which he alludes, and there is scarcely a department of scientific knowledge that he has not enriched, we can only account by supposing that he looked into the volume of nature with a glance, deeper and more comprehensive than that of any other mortal not divinely inspired; seeming almost to possess the "gift of prophecy," and to "understand all mysteries and all knowledge," which he uttered "as with the tongues of men and of angels."

In illustration of Shakspeare's extraordinary psychological knowledge, let us glance for a moment at the ideas entertained of that intricate disease, insanity, by his contemporaries, in order to contrast them with his own, as set forth in his works. Insanity was uniformly regarded by the contemporaries of the poet as an infliction of the devil. All the unfortunate sufferers from this dreadful malady were supposed to be "possessed" by Satan. This was not alone the vulgar opinion of some of the most distinguished medical writers. St. Vitus was sometimes invoked; spells were resorted to, and amulets worn. Even such profound philosophers as Lord Bacon believed in these. Sir Theodore Mayence, who was physician to three English sovereigns, and supposed to have been Shakspeare's Dr. Caius, believed in supernatural agency in the cure of this and other diseases. One of the most common of remedial means in the time of Shakspeare was whipping. He seems to have been aware of this, as of most other things, for, in *As You Like It*, (Act III., Scene II.) he makes Rosalind say to Orlando:

"Love is a mere madness; and, I tell you, deserves as well a dark house and a whip as madmen do: and the reason why they are not so punished and cured is, that the lunacy is so ordinary that the whippers are in love too."

In opposition to these views of insanity so universally entertained by his contemporaries, Shakspeare, as his works conclusively show, believed, with enlightened modern physicians, that insanity was a disease of the brain, and could be cured

by medical means, aided by judicious care and management; all which he points out as clearly as it could be done by a modern expert.

Falstaff, when outwitted by the Merry Wives, says:

"Have I laid my brain in the sun, and dried it, that it lacks matter to prevent such gross o'erreaching as this?"

And again, when he had been induced by these same women, in order that he might be safely conveyed from the house when in danger of a broken head, to conceal himself in a basket of foul linen, under pretence of being carried to the laundress, he is by their direction taken and thrown into the Thames, he thus soliloquizes:

"Have I lived to be carried in a basket, like a barrow of butcher's offal, and to be thrown into the Thames? Well, if I be served another such trick, I will have my brains taken out, and buttered and given to a dog for a new-year's gift."

Laertes, on seeing Ophelia deranged, exclaims: "O heat, dry up my brains!"

Othello, when racked by jealousy, and goaded by the insinuations of Iago, was supposed to be insane. Hence Lodovico asks: "Are his wits safe; is he not light of brain?"

Jacques, in *As You Like It*, (Act II., Scene VII.) speaks of the brain of a fool, as being "dry as the remainder biscuit after a voyage."

In *Macbeth*, Shakspeare has given us in the dagger scene (Act II.) one of the most admirable illustrations of hallucination to be found. Previously to the incident described in this scene, the mind of Macbeth had been wrought up to the highest pitch of excitement, short of actual mania, by the importunities of Lady Macbeth, and the contemplation of the guilty deed he was about to undertake, and its consequences. Finally, after goading him to the verge of distraction, and having, as she says, "screwed up his courage to the sticking point," he exclaims:

"I am settled, and bend up
Each corporeal agent to this terrible feat!"

Although his purpose was determined, his mind was evidently far from being "settled." He had dwelt so long on the act, and the means by which it was to be accomplished, that his thoughts were taking a material shape, and the creations of his excited imagination had become to him as embodied realities, and stood out before his eyes as clearly and as palpably defined as real bodily existences.

This condition of the mind, to which much attention has been given by modern psychologists, is most admirably set forth and illustrated in the famous dagger scene. On first perceiving the image of the dagger, his reason, yet intact, leaves him to doubt the evidence of his eyes, and he seeks to confirm the visual sense by the more accurate and trustworthy sense of touch; and what follows is most profoundly interesting and truthful in a psychological point of view; and illustrates the true theory of apparitions now, after two centuries, just beginning to be understood by scientific men:

"Is this a dagger which I see before me,
The handle towards my hand?
Come, let me clutch thee:
I have thee not, and yet I see thee still.
Art thou not, fatal vision, sensible
To feeling as to sight? or art thou but
A dagger of the mind, a false creation,
Proceeding from a heat-oppressed brain?"

Looking again intently at the vision, and striving to comprehend it by the help of reason, now beginning to stagger from prolonged and excessive mental excitement, he exclaims:

"I see thee yet, in form as palpable
As this which now I draw.
* * * * *
Mine eyes are made the fools o'the other senses,
Or else worth all the rest."

Finally, after a struggle, reason succeeds in correcting the evidence of the senses, and he exclaims:

"There's no such thing.
It is the bloody business which informs
Thus to mine eyes!"

After the accomplishment of the bloody deed Lady Macbeth seems to have a presentiment of the consequences to her own mind and that of her husband, from the prolonged excitement, and from dwelling upon the awful circumstances their guilt has brought upon them. And here follows that beautiful apostrophe to sleep, the great preventive and restorative remedy in mental disease. She says to Macbeth:

"Consider it not so deeply.
* * * * *
These deeds must not be thought
After these ways; so, it will make us mad."

Macbeth, in reply, alludes to another hallucination, that of the sense of hearing, and says :

“Methought I heard a voice cry, ‘Sleep no more !
Macbeth doth murder sleep ; the innocent sleep ;
Sleep that knits up the raveled sleeve of care,
The death of each day’s life, sore labor’s bath,
Balm of hurt minds, great nature’s second course,
Chief nourisher in life’s feast.’”

* * * * *
Still it cried, ‘Sleep no more ! to all the house.
Glamis hath murder’d sleep : and therefore Cawdor
Shall sleep no more, Macbeth shall sleep no more !”

So great was Shakspeare’s intuitive psychological knowledge, that everything in his characters is in perfect keeping. If he wishes to draw insane characters, he first exhibits them as surrounded by the predisposing and exciting causes of the disease, and insanity follows as the natural result of what has preceded it.

Neither Macbeth nor Lady Macbeth appear to have had the predisposition to the disease so strongly marked as we observe it in Lear or Hamlet, and though the *exciting* causes were brought to operate powerfully upon both, still they were not sufficient to bring it about completely.

Neither could be called at any time insane, though Macbeth suffered hallucinations of sight and hearing, and Lady Macbeth was a somnambulist, and talked of the murder, and strove to cleanse her hands of the imaginary blood-stains ; yet she was rational enough when awake. Each, however, feared the occurrence of the disease in the other.

In Act V., Scene III., Macbeth appears to think Lady Macbeth deranged, and in reply to the physician’s remark that she is—

“Troubled with thick coming fancies,
That keep her from her rest,”

says—

“Canst thou not minister to a mind diseased ;
Pluck from the memory a rooted sorrow ;
Raze out the written troubles of the *brain* ?”

Nothing could be more true to nature than the mental disquietude and remorse of conscience incident to guilt, as depicted by the dramatist in Act V., Scene I., where Lady Macbeth is first introduced to us as a somnambulist.

In this state of imperfect sleep she gives vent to the

thoughts which agitate her mind so powerfully during her waking moments; thoughts she would fain conceal in the deepest recesses of her spirit.

She walks about with lighted taper, her eyes open, but they convey to her mind no impression of external things; but to the inward sense, the "mind's eye," the scenes and circumstances connected with the murder are painfully vivid. With this *inward sense* she sees the bloody marks upon her hands, and crying, "Out, damned spot?" strives in vain to wash them away. With this inward sense she smells the blood, and in her anguish exclaims: "All the perfumes of Arabia will not sweeten this little hand. Oh! oh! oh!"

This closes all that relates to Lady Macbeth, and she is not again introduced. The dramatist knew when, and where, and how to withdraw his characters from the scene, and that the prolonged exhibition of such mental anguish as is shadowed forth in the somnambulism of Lady Macbeth would be unfavorable to dramatic effect.

In none of Shakspeare's plays, if we except Hamlet, is the psychological knowledge of the dramatist more admirably exhibited than in Lear. "The case of Lear," says a late distinguished psychologist, "is a genuine case of insanity from beginning to end, such as we often see in aged persons."

The very first act of Lear, exhibited by the dramatist, evinces that well-known imbecility incident to old age, and which frequently results in confirmed, senile insanity. Incapable alike of perceiving the hollow pretensions of affection on the part of Goneril and Regan, or the truthfulness of Cordelia, and the disinterestedness of Kent, he makes over his kingdom to the former with all its revenues, retaining only "the name, and all the additions to a king," and making only such stipulations as are in perfect keeping with his mental state, and that madness first glanced at by Kent, which was hanging over him.

With great psychological exactness Shakspeare has from the first endowed Lear with those mental peculiarities and eccentricities which experienced medical psychologists recognize at once as the forerunners of confirmed mental disease, but which are usually overlooked by ordinary observers, or not regarded as pathological phenomena, but as the ebullitions of a temper and disposition naturally fiery and irritable perhaps, and now rendered unbearable through the infirmities incident to age.

This seems to have been the view of Lear entertained by his daughters, as also by those modern critics who, far more ignorant of psychology than the poet who wrote two hundred

years before them, have regarded the insanity of Lear as caused solely by the ingratitude and unkindness of his daughters. In answer to a remark of Goneril, respecting the changeableness of their father's disposition, Regan says: "'Tis the infirmity of his age, yet he has ever but slenderly known himself."

"The best and soundest of his time has been but rash," says Goneril. Regan replies: "Such *inconstant starts* are we like to have from him as this of Kent's banishment."

However this may have been looked upon by them, and many of Shakspere's commentators of the last century, considered by the light of modern psychological science, it must be regarded as a premonition of the disease which followed, and was undoubtedly so intended by the poet.

Time and the change in Lear's outward circumstances bring about no change for the better in his disposition or mental state, and the next thing we hear of him is that in a paroxysm of rage he has resorted to open violence, "broken the peace," and beaten one of Goneril's gentlemen for chiding his fool.

Her remarks upon the transaction show how rapidly the disease is advancing, before he has received any marked unkindness from her or her sister:

"By day and by night he wrongs me, every hour
He flashes into one gross crime or other,
That sets us all at odds."

All through Scene IV., Act I., we trace a gradual increase of the mental excitement of Lear, rendered worse by the injudicious treatment he receives; and towards the conclusion, after the interview with Goneril, where he is reproached by her for the riotous conduct of his train, and requested to diminish it, which request is accompanied by a threat in case of non-compliance, he becomes quite frantic with rage.

This barefaced outrage upon the kingly dignity he has reserved to himself puts him in a towering passion:

"Darkness and devils!"
Saddle my horses—call my train together.
Degenerate bastard! I'll not trouble thee;
Yet have I left a daughter."

Striking his head with rage, and pouring out such epithets as "Detested kite!" upon her, he gives vent to his insane rage in that blasting curse, that withering imprecation, which reminds one so strongly of what is frequently heard from the mouths of highly excited patients in the wards of a lunatic

asylum. With an ingenuity and a refinement of malice worthy of an insane man, he seizes upon the weakest and most vulnerable point in her female nature, and to that point he directs his attack. After pouring out the vials of his wrath upon her without stint, his rage finds vent in tears, and he says :

"I am ashamed
That thou hast power to shake my manhood thus."

The first intimation Lear himself gives of his own apprehensions of insanity we have at the conclusion of Scene V. After amusing himself for a time with the fool he becomes more calm, and apparently more capable of taking a survey of his mental condition.

In reply to the fool, who reminds him that he should not have been old before he was wise, he says, apparently abstracted :

"Oh let me not be mad, not mad, sweet heaven!
Keep me in temper; I would not be mad!"

It is one of the most rare things in the world to find a man decidedly insane, and yet conscious of his infirmity; yet a premonition of the impending malady, a certain consciousness that it is approaching, frequently seizes the doomed subject, as is apparent above in the case of Lear.

Thus far the whole character is psychologically consistent, and the wonderful skill and sagacity manifested by the great dramatist in seizing upon these premonitory signs, which are usually overlooked by all, even the patient's most intimate friends, and the members of his family, and thus weaving them into the character of his hero as a necessary element, without which it would be incomplete like those of inferior artists, is a matter of wonder to all modern psychologists.

We next find Lear before the castle of Gloster, where, instead of meeting with that kind reception and welcome which he expected from his other daughter and her husband, his mind and feelings are destined to receive another sad shock.

Here he finds his messenger and faithful attendant, Kent, in the stocks, placed in this degrading position by the orders of his son-in-law and daughter. He is so much astounded by the outrage and disrespect heaped upon him by their treatment of his messenger that he can scarcely believe the palpable evidence of the insult before him, and declares that they could not, dare not, and would not do it; and when the circumstances attendant upon it are clearly laid before him by Kent, and his mind grasps the full extent of his degradation, and he

finds himself spurned, insulted, and forsaken by those upon whom he has heaped such great benefits, at the expense of his own dignity, crown, and kingdom, his outraged feelings are admirably set forth in what follows :

“O, how this *mother* swells up towards my heart!
Hysterica passio! down, thou climbing sorrow,
 Thy element's below!—Where is this daughter?”

At every step through this wonderful play we find evidence, like the above, of Shakspeare's wonderful medico-psychological knowledge—a knowledge scarcely possessed by any even in our day, except those few who devote themselves to this special department of medical science.

The influence also of bodily disturbances upon the mental faculties is very truthfully set forth by Lear in the following:

“We are not ourselves
 When nature, being oppressed, commands the *mind*
 To suffer with the *body*.”

If a modern psychological writer, with all the knowledge of modern times at his command, were laboring to convey to the minds of his readers the manner in which insanity is induced in those predisposed by nature to the disease, in order that such persons and their friends might guard against the malady, he could not do better than point out the conduct of Goneril and Regan towards Lear, as set forth in Act II., Scene IV., of the play. All the feelings of his generous nature are outraged and trampled upon. The waywardness manifested as the result of impending disease meets with none of that gentle forbearance we are accustomed to expect from the native gentleness of woman and the affections of daughters, but selfishness and ingratitude reign supreme in their hearts. Would that this were only an isolated or imaginary case! Sensible of his great wrongs, and apparently conscious of what was being wrought by them in his own generous and confiding mind, already staggering under the stroke of disease, he exclaims: “I pr'ythee, daughter, do not make me *mad!*” And again, before quitting their presence to encounter the storm without, he alludes to the state of his mind:

“I have full cause of weeping; but this heart
 Shall break into a hundred thousand flaws,
 Or ere I'll weep—O fool, I shall go *mad!*”

We next meet Lear on the heath, in the midst of the storm. Nothing in the whole range of dramatic literature can excel

this, either in sublimity of conception, grandeur of description, or psychological interest. In fact, we conceive it is the psychological element infused into the scene which gives it its peculiar intensity—the howling and raging winds, the “spouting cataracts,” the “oak-cleaving thunderbolts,” and thought-executing fires:—in short, that external commotion of the physical elements seems merely thrown in as a back-ground to that terrible picture of mental commotion which reigns within the mind of the old man. These elements are but

“Servile ministers,
That have with two pernicious daughters joined.”

These he taxes not with unkindness; he never gave *them* kingdom, or “called *them* children.” *They* “owe him no subscription”—therefore they can “let fall their horrible pleasure,” and join

“Their high-engendered battles ‘gainst a head
So old and white as this.”

The one absorbing idea, the ingratitude of his daughters, shuts out, as far as he is personally concerned, all idea of physical suffering. It is a well known fact that when the mind is swayed by intense emotions, the sensibility even to intense bodily pain is often completely suspended. The physical endurance manifested by the insane under certain circumstances is truly astonishing—even delicate females have been known to undergo with impunity what might be supposed sufficient to destroy the most vigorous physical constitution. This fact is most beautifully and concisely set forth by Lear in allusion to the suffering of his companions in the storm upon the heath, when they urge him to take shelter in the hovel:

“Thou think’st ’tis much, that this contentious storm
Invades us to the skin: so ’tis to thee;
But when the greater malady is fixed,
The lesser is scarce felt.

* * *

When the mind’s free,
The body’s delicate; the tempest in my mind
Doth from my senses take all feeling else,
Save what beats there.”

This brings round again the ever-recurring thought of filial ingratitude, and after casting a few words of bitter reproach upon Goneril and Regan, he suddenly checks himself, yet conscious apparently of the dreadful consequences to his already

shattered mind, which would result from dwelling upon it, with the exclamation :

“ O, that way *madness* lies ; let me shun that ;
No more of that.”

The tempest which pours its fury upon his “old white head” is of little moment when compared with that which reigns within. In fact, he appears to regard the former as a blessing, because it—

“ Will not give me leave to ponder
On things would hurt me more.”

But perhaps the most ingeniously-constructed scene in the whole play is that in which the poet brings together Lear, now an undoubted madman, Edgar, who assumes madness for purposes of disguise and deception, and the Fool. What results are to be anticipated from the operation of the extraordinary psychological machinery, now set in motion by and under the direction of the great artist, none but the master-workman himself can foresee. Here, however, all things work together harmoniously. Every thing is consistent. The appearance of Edgar, ragged, forlorn, a miserable picture of wretchedness and woe, serves only, like the elements in the former scene, to arouse the predominant idea in the mind of the madman ; and filial ingratitude, nothing else, could have brought him to this state. And recognizing in him a counterpart of himself, his first question is, “Hast thou given all to thy two daughters?”

The warm sympathetic nature of Lear is strongly aroused by the object before him, whom he regards as a fellow-sufferer from like causes, and though not a king, like himself, he is nevertheless a “philosopher and most learned Theban ;” and respectfully craving the “noble philosopher’s” company, and essaying to enter into scientific discourse, asks him his studies, and gravely inquires “the cause of thunder.” How beautifully true all this is to nature, those who are at all acquainted with insanity can furnish ample testimony ; as, also, how admirably the genuine disease contrasts with the counterfeit, with which it is here brought in contact.

In the scene in the farm-house the ideas of Lear appear still more fantastic, yet the dominant thought, the ingratitude of his daughters, is ever present. Edgar, his companion in misery, is now no longer a “noble philosopher,” a “learned Theban,” but a learned “justicer,” and the thought of arraigning his daughters before a tribunal made up by him, the Fool—his “yoke-fellow in equity”—and Kent, is presented to

his wayward fancy. He himself appears as a witness for the prosecution.

Goneril is first arraigned in his imagination, before this extraordinary tribunal, and then follows the testimony of Lear:

"I here take my oath before this honorable assembly, she kicked the poor king her father. She can not deny it."

After a momentary excitement caused by the imaginary escape of one of the culprits, he seems to suppose sentence to have been passed, and exclaims:

"Then let them anatomise Regan,
See what breeds about her heart."

Scenes quite as ludicrous as the one set forth above, are of daily occurrence in the wards of all extensive establishments for the insane, and those familiar with them can scarcely divest themselves of the idea that the poet has given in this an exact transcription of nature without assistance from his imagination.

The next information we have of Lear comes to us through Cordelia and the Physician, (Act IV., Scene IV.) where he is represented as—

"Mad as the vexed sea; singing aloud;
Crowned with rank fumiter, and furrow weeds."

Cordelia immediately takes occasion to ask the Physician—

"What can man's wisdom
In the restoring of his bereaved sense?"

The reply of the Physician is significant, and worthy of careful attention, as embracing a brief summary of almost the only true principles recognized by modern science, and now carried out by the most eminent physicians in the treatment of the insane.

We find here no allusion to the scourgings, and charms, the invocation of saints, &c., employed by the most eminent physicians of the time of Shakspeare; neither have we any allusion to the rotary chairs, the vomitings, the purgings by hellebore, the showerings, the bleedings, scalp-shavings, and blisterings, which, even down to our own times, have been inflicted upon these unfortunates by "science falsely so-called," and which stand recorded as imperishable monuments of medical folly; but in place of all this, Shakspeare, speaking through the

mouth of the physician, gives us the following principle, simple, truthful and universally applicable:

“There is means, madam.
Our foster-nurse of nature is repose,
The which he lacks: that to provoke in him,
Are many simples operative, whose power
Will close the eye of anguish.”

The “means” set forth by the physician, we learn at the conclusion of Act IV., were used successfully in the restoration of Lear. He is thrown into a deep sleep, and from this he awakes convalescent.

Here follows another most important consideration, which is not overlooked by this wonderful medical psychologist.

He leaves nothing incomplete, therefore the danger of *relapse* must be taken into consideration, and the means to prevent it are pointed out with his usual truthfulness and accuracy. This we have in the advice given by the physician to Cordelia. He says:

“Be comforted, good madam. The great rage
You see is killed in him; [and yet 'tis danger
To make him even o'er the time he has lost.]
Desire him to go in; trouble him no more,
Till further settling.”

The late distinguished physician to the insane, Dr. Brigham, remarking on the above, says: “Now we confess almost with shame, that although near two centuries and a half have passed since Shakspeare wrote thus, we have very little to add to his method of treating the insane as thus pointed out. To produce sleep, to quiet the mind by medical and moral treatment, to avoid all unkindness, and when the patients begin to convalesce to guard, as he directs, against every thing likely to disturb their minds and cause a relapse, is now considered the best, and nearly the only essential treatment.”

But of all Shakspeare's plays none is so exceeding rich in profound psychological knowledge as Hamlet. Upon the consideration of the characters he has given us in this wonderful offspring of his genius, we can not, however, enter at present.

IV. *On the Nature, Seat and Relations of Neuralgia.* By
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to St. Mary's Hospital.

THE prevalent opinion respecting the nature of neuralgia seems to be that its existence implies an excited or over-active condition of the sensory nerves. Romberg uses neuralgia and hyperæsthesia as convertible terms, and states—"In hyperæsthesia we find that not only the irritation is increased, but that also the irritability of the nerves of sensation generally is exalted both during the paroxysms as well as in the intervals." It is very evident that we can have no knowledge from actual observation of the state of the effected nerve or nerves during the neuralgic attack. We must form our conclusions as best we may from consideration of the attendant circumstances, the *juvantia*, and the relation of the disorder to others. For the moment let us put aside all cases of neuralgia which may be regarded as depending on a local irritation of any kind—either direct, as a splinter imbedded in a nervous trunk; or remote, as a worm in the bowels; or on demonstrable poison generated in the system, or received into it—e. g., that of gout or lead. There remain then all those cases in which the disorder is dependent upon no ascertainable cause, except it be malaria, a draught of cold air, exposure to damp, overwork of mind or body, or some cause of exhaustion. These form a group which may be distinguished as Non-organic Neuralgia. Now, in these the existing debility or prostration is at least very often almost as marked a symptom as the pain. It is also more abiding and unvarying, and the conviction becomes wrought in the mind of the observer, that it is the fundamental state upon which the pain is, as it were, engrafted—the appropriate soil without which the seed would not grow. It is proved by experience that, unless this debility and prostration can be removed, and replaced by healthy vigor, no real progress can be made in the cure of neuralgia. The task is like that assigned to Sisyphus, the patient's and doctor's hope is worn out by ever-recurring relapses. The debility seems in a special manner to affect the nervous system. The brain is languid and dull, and inapt for mental labor; sometimes its function actually fails, and wandering or delirium occurs. Stimuli are beneficial, often very remarkably so, though their effect is temporary. Fresh, pure air, good food, sufficient repose alternating with exhilarating employment, supplemented or aided, if need be, by nerve tonics, are the real remedies, and just in proportion as they increase the general tone and

strength does the patient attain complete recovery and immunity from relapses. On the other hand, just as surely do all causes of debility confirm, increase, and render inveterate the malady.

Now, it may be fairly argued that when the symptoms of debility, and especially of nerve debility, are so apparent, and have so distinct a relation to the particular symptom, this must be itself of like essential character. It can hardly be that the morbid state of the nerve affected can be greatly different from that which prevails so generally throughout the system, especially when we consider the means which avail for the cure of both. Romberg's metaphorical expression, speaking of anæmic hyperæsthesia (i. e., neuralgia,) that "it seems as if pain were the prayer of the nerve for healthy blood," is, in all probability, exactly true. The nutrition of the nerve being ill performed, its structure undergoes some molecular alteration which conditionates pain. What is true of neuralgia from this cause I believe is true of all cases belonging to the non-organic class. Electrical disturbances, damp cold, malaria, seem to me all to act in the like way as far as we can judge—viz., by deranging the molecular nutritive actions of the nervous structure, and so impairing its function. There are several circumstances which seem to me strongly to support this view. One is the very frequent co-existence of numbness with the neuralgia pain, especially in highly sensitive parts, as the fingers and hands. One cannot say in what the condition producing numbness differs from that producing pain; but it is clear there is no opposition between them; both are often present together, and the numbness commonly remains as the more permanent condition in the intervals of the paroxysms of pain, and even after they have ceased to occur. Now, numbness is evidently a failure of functional action. Of the same import is the occurrence of various degrees of muscular paralysis, which is often associated with neuralgia, evidently as an analogous affection of the motor nerves. It yields to the same treatment. The phenomena of myalgia may also be referred to an illustration of the nature of neuralgia. Here we have a manifest instance of the relation of pain to debility; the sensory nerves of the muscles express pain because they are weak; whatever increases the debility increases the pain, and *vice versa*. The relation of ague to neuralgia is worth considering in respect to this question. It is certain that neuralgia may be a manifestation of malarious influence just as much as ague, and that the two may replace each other. It may also be affirmed that in neuralgia (non-organic) from other causes, the pain-causing condi-

tion of the nerve must be the same as in malarious neuralgia. Now, in an ague fit there is no doubt that the vaso-motor nerves are in a paralytic state, consequently it is probable that in a neuralgic paroxysm the sensory nerves are similarly affected. Lastly, we may allude to the cure of neuralgia by Faradization as an illustration of its nature. The pain of a sensory nerve and the paralysis of a motor may both be removed by the stimulus of the interrupted current. This surely indicates that both states are similar.

Even in organic neuralgia, it seems to me a matter of much question whether the nerve affected is in a state of exalted excitability, or simply of deranged and disordered nutrition. In lead poisoning, the motor nerves of the muscles are certainly paralysed, the pains are diminished (Romberg) "by pressure and friction," and the whole phenomena are indicative of diminished, rather than of increased, vital actions. The curative action of the sulphuret of potassium bath is only intelligible by regarding it as a peculiar stimulus to a great sensory surface, which is reflected from the nervous centres on the paralysed nerves and muscles. That it does produce muscular contraction, at least in some cases, is, I believe, certain. In gouty neuralgia, if we take colicky and spasmodic affections for examples, the disorder is much more of an asthenic than hyperæsthetic character. The pain and suffering attending a characteristic outbreak of gout in the foot have much more the features of hyperæsthesia than the colicky disorder. That a nerve which receives for nutrition blood poisoned by uric acid should be disordered in its acting, and thrown into a state conditioning pain, is very intelligible, but it can hardly be regarded as having its irritability exalted. On the other hand, the nerve lying in a focus of inflammation, by reason of the active hyperæmia, would seem really to be in a state of hyperæsthesia. Its condition is analogous to that of the nerves of one posterior limb in Brown Séquard's experiments of tranverse semi-division of the dorsal cord, where hyperæsthesia is produced in consequence of paralysis of the vaso-motor nerves, and the resulting hyperæmia.

Again, when neuralgia results from the impaction of a spiculum of bone, the development of a tumor, or the like, in a nervous trunk, although severe pain may be produced, it does not seem very clear that the nervous irritability is necessarily exalted—i. e., that the nerve filaments, either on the distal or proximal side of the irritant, are more sensitive than they would be naturally. In fact, one would rather expect that the normal function of the nerve would be interfered with. In a case of neuroma recorded by Mr. Toynebee in

the Pathological Society's Report for 1851, the only symptom was a diminution of the power of hearing. In the case recorded by Dr. Denmark, where severe neuralgia was produced by a fragment of a bullet imbedded in the radial nerve, no mention is made of the painful parts so unusually sensitive. The same may be said of a case recorded by Sir B. Brodie, in which a femoral aneurism produced pain at the inside of the knee. The following case from the *Dublin Medical Journal*, May, 1848, bears decidedly on this point:

C. M——, aged twenty-seven, widow, mother of four children, had a neuromatous tumor developed in the course of the median nerve, of the size of an almond, in consequence of the nerve having been divided an inch above the wrist by broken glass. If anything, even her dress, touched the tumor, severe pains shot down to the hollow of the palm of the hand, and upwards to the shoulder. She complained much of numbness and coldness of all parts of the hand supplied by the median nerve. The nerve was cut across, and the neuroma removed. Fifteen months after the operation, she was quite free from pain, and observed nothing abnormal, except a remarkable coldness of the fingers supplied by the median nerve.

In some cases, however, it is certain that the peripheral nervous filaments are truly hyperæsthetic, as in the case related by Romberg (p. 37–44). In this, however, the hyperæsthesia may be accounted for by the increased supply of blood sent to that side of the face, the arteries pulsating strongly and the eye being bloodshot and prominent. The same explanation may apply to many other cases where the neuralgia is complicated with hyperæsthesia. The hyperæmia is conditioned by paralysis of the vaso-motor nerves, which run in company with the sensory, and this very circumstance is a further reason for viewing the fundamental condition of neuralgia as one of paralysis rather than excitement.

From the considerations which have been advanced, I am led to conclude, that in the majority of cases neuralgia essentially implies a lowering of the vital power and functional action of the nerve, not an increase. There are, however, certainly cases in which the painful parts are not manifestly hyperæmic, but are yet excessively tender, and intolerant of the least pressure. In these it is clear that the excitability of the nervous apparatus is morbidly increased, yet I question whether the term hyperæsthesia is properly applied to them. In the state referred to, any, even the least excitement brings on or aggravates the pain. This certainly implies an undue mobility of the nerve-structure, a readiness to be thrown into

the pain-causing condition, but by no means a real increase of sensory power. It is by no means clear that a part in this state would appreciate two points as separate at a smaller distance from each other than it would when healthy. I should not regard such a condition as identical with that induced by partial division of the spinal cord, as in Brown Séquard's experiments, or by strychnia poisoning. I think it probable that in these cases the morbid action is seated more peripherally towards, or in, the cutaneous terminations of the filaments; while in ordinary neuralgia the larger ramifications of the trunks are affected.

From the preceding discussion, we pass to the consideration of the question—what is the real seat of neuralgia—in the nerves or in the centres? Obviously, this is no easy question to answer. According to the law of eccentric phenomena, every sensation of which we are conscious is referred to the peripheral termination of the sensitive fibres (so Romberg writes). Bowman and Todd add that the sensation is referred to those parts, and to those only, to which the fibres irritated are distributed. According to this view, then, all appreciation of sensations as referred to any point in the course of the nerve is out of the question. An irritation, wherever set up, must be felt at the peripheral extremity of the fibres implicated, and never in any part of their intermediate course. But there are facts which are strongly opposed to this exclusive dogma, and which seem to prove that a sensation may be referred to various points in the course of the nerve-fibre. If we hit our funny-bone, although no doubt pain and tingling are felt at the peripheral distribution in the fingers, yet the chief agony is in the trunk of the almar nerve at the part struck, and certainly not merely in the skin covering it. The circumstance dwelt on by Valleix, that the specially painful points in nerves affected with neuralgia are always those where the nerve becomes superficial, is also a proof of a sensation being referred to other points besides the terminal. The same may be said of the pains which patients describe as shooting down along the track of a nerve as the sciatic. These certainly are not located merely in the skin which covers in the nervous trunk.

From these considerations, I am led to admit the possibility of very numerous exceptions to the law of eccentric phenomena, and to believe that pain in a nerve may really indicate by its situation the seat of the irritation or other morbid action. This is a conclusion of some importance to the local treatment of neuralgia. It justifies our empirical habit of applying sedative remedies as near as possible to the seat of

pain. But of course we cannot affirm, in any case of pain involving the trunk of a nerve, that the morbid action *may* not be central; the law of eccentric phenomena holds true so far as that central disorder may certainly give rise to peripheral sensation. The only means of certainly distinguishing the site of the pain-causing action is division of the affected nerve. If this arrests the neuralgia, we know the disorder is seated peripherically; if it fails to do so, we know we have to seek more centrally. In a very large number of cases, I fear it must remain problematic as to where the real seat of the disorder is. If—the pain being specially referred to some intermediate spot—jection of opium at that part (subcutaneous) should give more relief decidedly than the same dose at a distance, it would afford ground for believing that the cause of the neuralgia was localized in that spot. In the ordinary way of rubbing sedative liniments on the cutaneous surface over the seat of pain, we have no means whatever of proving a local action upon the suffering nerve, but rather the reverse. For take the case of the sciatic nerve, where pain is acutely felt at the back of the thigh, and notably between the ischiatic tuberosity and the great trochanter: if this is relieved by a sedative application to the covering cutaneous surface, we are sure that the chief action of the remedy must be on cutaneous ramifications of the glutæal, lesser sciatic nerves, and branches of the external cutaneous and other nerves on the front of the leg. These will convey impressions to the spinal centre, not far from the part where the roots of the sciatic are implanted; so that if the neuralgia were of central origin, it is very conceivable that the morbid action might in this way be beneficially modified. But, considering the depth at which the sciatic nerve lies from the surface, it seems quite impossible that the aconite, chloroform, &c., should penetrate so far through the skin, fat, and fascia, or even muscles. There exists some evidence to show that any strong impression made on the centre (such as cauterizing the ear, galvanizing the columna nasi) through incident nerves may put a stop to some neuralgiæ.

The relations of neuralgia are of course very different according to the cause which gives rise to it. If, however, we take the commonest kind—which arises from cold, malaria, debility—we must allow that it manifests a very close affinity with non-febrile *rheumatism*. Rheumatic and neuralgic pain are frequently so very similar, that they are only to be distinguished by the action of remedies. Iodide of potassium cures the rheumatic, quinine and iron the neuralgic; while often it occurs that in the same case, after having begun with the

former, we have to resort to the latter to complete a cure. The beneficial action, noticed by several recent observers, of muriate of ammonia in neuralgia, can scarcely be dissociated from its remarkable and positive remedial action in muscular rheumatism. The interesting but obscure phenomenon of rheumatic paralysis is closely similar to, if not identical with, the paralysis or paresis of motor nerves which so often forms a part of neuralgi. *Catarrh* is allied to neuralgia by the similarity of its causes, the manifest implication (sometimes to a grave extent) of the cerebro-spinal nervous system, the resemblance of its inflammatory actions to those sometimes accompanying and depending on neuralgia, and in a large number of cases by its "juvantia." If exhaustion aggravates a neuralgia, so does it also a catarrhal flux; while rest and toning means have an opposite effect. The affinity between neuralgia and *ague* in malarious cases is strikingly apparent; the two disorders so evidently replaces each other, that there can be little doubt that the difference is only one of situation; the sensory nerves being affected in one case, the sympathetic system in the other. The therapeutic effects of arsenic and of quinine in *ague* and in common neuralgia, *rapprochent* the two disorders not a little.

V.—*Remarks on Anæsthesia, and the Agents employed to produce it.* By GEORGE HAYWARD, M. D., late Professor of Surgery in the Massachusetts Medical College, Boston, U. S. A. (From the British and Foreign Med. Chir. Review.)

THE discovery by which surgical operations can be rendered painless is one of the greatest connected with our profession, second only to that of vaccination. It is a blessing to the human family that cannot be overrated; and having been among the first to make a successful use of it in surgical practice, I thought that a brief sketch of the history of anæsthesia, and some remarks on the comparative value of the agents employed to produce it, would not prove uninteresting.

It was my fortune to perform the first capital operation on a patient rendered insensible by the inhalation of sulphuric ether. This was done on November 7th, 1846, at the Massachusetts General Hospital, Boston. On September 30th, preceding, Dr. Morton, a dentist, administered it to a man, from

whom he extracted a tooth without causing pain. Almost immediately after, he requested the late Dr. John C. Warren, who was at that time the acting surgeon at the hospital, to use it at that institution. Dr. Warren consented. It was inhaled by a patient, with partial success, on whom Dr. Warren operated on October 16th. The operation was the removal of a nævus from the face. On the day following, I extirpated a large fatty tumor from the arm of a female, who was made wholly unconscious and insensible by the inhalation of the ether. The operation lasted seven minutes.

At that time Dr. Morton was, I thought, the only person who knew what the anæsthetic agent was. On November 1st, I took charge of the surgical department of the hospital, and in a day or two after Dr. Morton asked me if I were willing to allow him to administer his "composition," as he called it, to a female whose limb I was about to remove above the knee. I told him I would not, unless I knew what the article was, and felt confident of the entire safety of its administration. He at once told me that it was rectified sulphuric ether. He allowed me to communicate this to my colleagues, with an understanding that it should not be made known publicly, until he had obtained a patent, for which he had already applied. On the following day the operation was performed, in the presence of more than two hundred spectators.

It rarely falls to the lot of a professional man to be the witness of a scene of more intense interest. The operating room was crowded. Many were obliged to stand. Besides the class of students in attendance on the lectures, numbering more than a hundred, and many of the principal physicians and surgeons of the city and neighborhood, there were present several clergymen, lawyers, and other individuals from the various callings of life. When I entered the theatre, before the patient was brought in, I found it, to my surprise, filled in every part, except the floor on which the table stood, with persons on whose countenances was depicted the almost painful anxiety with which they awaited the result of the experiment they were about to witness. I simply told them that I had decided, with the advice of my colleagues, to allow the patient, on whom I was to operate, to inhale an article which was said to have the power of annulling pain. The patient was then brought in. She was a delicate-looking girl of about 20 years of age, who had suffered for a long time from a scrofulous disease of the knee-joint. It had at length suppurated; there were extensive openings into the cavity of the joint; the cartilages were ulcerated and partly absorbed; the bones carious, and symptoms of hectic fever had already made

their appearance. As soon as she was well arranged on the table, I told her that I should let her breathe something which, I hoped, would prevent her from suffering much from the operation, and that she need not be afraid of breathing it freely.

As the ether was at the time administered by means of a large and clumsy instrument, which required to some extent the coöperation of the patient, it was desirable that the amputation should be done as rapidly as possible. Every thing, therefore, was arranged with this view. I decided to perform the flap operation. One person was to compress the artery, another to withdraw the flaps, a third to hand the instruments, and a fourth to watch the pulse. I grasped the patient's limb with my left hand, and held the amputating knife behind me in my right, carefully concealed from her view. The mouth-piece of the inhaling instrument was then put into her mouth, and she was directed to take long inspirations. After breathing in this way a short time, the nostrils were compressed, so that all the air that went into the lungs must first pass through the machine, and of course be mixed with the vapor of the ether. She breathed with perfect ease, and without struggling, and in about three minutes from the time the instrument was put into her mouth, Dr. Morton said, "She is ready." A death-like silence reigned in the room; no one moved or hardly breathed. I passed the knife directly through the limb, and brought it out as rapidly as I could, and made the upper flap. The patient gave no sign of feeling or consciousness, but looked like one in a deep, quiet sleep. Every other person in the room took a full inspiration that was distinctly audible, and seemed to feel that they could now breathe again. The second flap was then made, the bone sawed, five arteries were tied, and as I was tightening the ligature upon the sixth and last, she groaned, being the first indication of sensibility that had been given. Nothing more was done than to bring the flaps together, cover the stump with cloths dipped in cold water, and apply two or three turns of a roller to keep them in place. Her consciousness soon returned; she was wholly ignorant that the operation had been done. For some time she would not believe it, and said that she had felt nothing till I tied the last artery. The operation lasted a minute and three quarters, not including the time required to tie the arteries. I did it rapidly, though it has been done in less time, because I feared that the insensibility might pass off, and we had no means then, as we have now, of continuing it as long as is necessary.

Patients who have inhaled ether, when its effects are at first

passing off, are usually bewildered, not easily controlled, and by no means inclined to do as they are desired. It would be almost impossible to persuade one of them at such a time to breathe through the instrument that was then in use. At present, fortunately, we can keep up the state of anæsthesia as long as we wish, by administering the agent employed for this purpose by means of a sponge. This simple contrivance was first used at the Massachusetts Hospital.

The patient whose case I have just spoken of recovered rapidly from the operation, was in good health when I left home eleven years after, and I have no reason to suppose that she is not so at the present time.

It will be readily believed that a result so successful, and witnessed by so many intelligent persons, made it impossible to doubt the anæsthetic power of the agent employed, and what this was very soon became known. In an almost incredibly short space of time, numerous operations were performed on persons rendered insensible by the inhalation of ether, in various parts of the United States and Europe, and there is hardly a country in Christendom in which it has not been thus used to a greater or less extent.

The Anæsthetic Agents.—These are sulphuric ether, chloroform, chloric ether, and amylene. The two latter are now rarely used for this purpose, and probably never will be again. Chloric ether is simply a tincture of chloroform. There are two kinds, one the concentrated and the other the chloric ether of commerce. The first is composed of one part of chloroform to nine of alcohol; and in the other there is one part of chloroform to fifteen of alcohol. It can be prepared by mixing the two ingredients of which it is composed in the proper proportions, and if the alcohol which it contains be evaporated, nothing but chloroform remains. It is evident that it derives its anæsthetic properties from the chloroform, and it is therefore as unsafe as that article; for the alcohol, though it renders it less efficacious, does not make it more harmless.

Amylene, the chemical elements of which are equal parts of carbon and hydrogen, has caused death in several instances. There have been so many fatal cases in proportion to the number in which it has been exhibited, that no one hereafter will probably be sufficiently reckless to use it.

Chloroform was first employed by Professor Simpson, of Edinburgh, who thought that it possessed "various important advantages" over sulphuric ether. He said that it was more portable, more agreeable to inhale, less exciting, and that it gave a greater control over the patient. That it is more

portable and more agreeable to inhale, I admit, but that it is less exciting and a more efficient anæsthetic agent, I deny. But the principal objection to it is, that its inhalation sometimes causes death. Its advocates admit that this has occurred in sixty cases, while others believe that there has been double this number. But be the number what it may, so many have died from its inhalation, that many persons are in favor of abandoning its use altogether. Death produced by it cannot now be attributed in every instance, as it was at first, to the impurity of the article, or to the exhibition of too large an amount, or to the want of skill or judgment in the administrator. There have been several fatal cases lately, where the chloroform was said to be of the purest character, and a small quantity only inhaled, and this, too, in the presence and under the direction of intelligent, well-educated and careful men.

The truth is, that chloroform, when inhaled, acts on the system in a way that is not yet well understood, and may destroy life in spite of the utmost caution. Its effects are sometimes so sudden, that no foresight can prevent a fatal result. Unless some means, therefore, can be discovered that will render its inhalation safe, common prudence and a regard for human life would seem to dictate that it should be no longer used in this way. It is true that this state of unconscious insensibility produced by it is a blessing of countless value to those who are to undergo severe surgical operations, not only by rendering them painless, but at the same time disarming them of their terror. And these are not the only advantages of anæsthesia. It in great measure prevents the shock to the nervous system which not unfrequently defeats the skill of the most expert surgeon; it enables him to operate more deliberately, removes all necessity for haste, which is often the result of the sufferings of the patient, and makes the performance of some operations comparatively easy, which in the ordinary state of the system could hardly be done at all. It is not, therefore, to be wondered at that professional men are reluctant to abandon the use of chloroform, and their unwillingness might be excused if there were not a substitute equally efficacious, as easily administered, and entirely safe. That rectified sulphuric ether is such a one, I have no doubt. I have witnessed its effects on several hundred patients upon whom severe surgical operations were performed, and all of them were rendered motionless, unconscious and insensible. In no instance was there any alarming or serious consequence. It does not act as speedily, perhaps, as chloroform, but in no case were more than eight minutes required to produce complete anæsthesia. It can be effected in much less time when

atmospheric air is not allowed to mix freely with the vapor of the ether. This is the method pursued in the hospital at Naples, where no other anæsthetic agent is used; and I saw a patient undergo a severe surgical operation there without the slightest suffering, who was brought into this state by inhaling ether only a minute and a third! But when administered thus rapidly, it is apt to produce a distressing cough and sense of suffocation for a moment, and there might be some reason to fear asphyxia from the exclusion to too great an extent of atmospheric air. Professor Polasciano, however, told me that he always gave it in this way, and had never seen any more troublesome symptoms than those I had witnessed in the case just alluded to. These, though distressing to the patient, were of short continuance, and by no means alarming.

There is no doubt in my mind that sulphuric ether should be used as an anæsthetic agent to the entire exclusion of chloroform. It is as efficacious, and I should say without hesitation, after having seen chloroform administered by others in many cases, that ether produces a more complete state of unconscious insensibility. Its effects pass off sooner, and less vomiting, nausea and headache follow its inhalation. It is as easily administered. All that is required for its administration is a bell-shaped sponge, with a concavity large enough to cover the nose and mouth. If the patient breathes it gradually, little or no irritation is produced in the larynx and air-passages, there is but little if any cough or sense of suffocation, nor a distressing or unpleasant symptom of any kind.

There may be some persons to whom the odor of ether is offensive and irritating, but they are comparatively few, and even they can be brought under its influence without any very great annoyance.

The quantity of sulphuric ether required to produce anæsthesia depends very much on the manner in which it is administered. If the patient is made to inhale it rapidly, and the atmospheric air is to a great extent excluded, a small amount will be sufficient. From four to eight ounces may be regarded as the average quantity. It is rare to meet with a case in which less than four ounces will be used; and in protracted operations, in which it is desirable to keep up the state of insensibility for a length of time, I have often given more than eight ounces. The ether should at first be poured on the concave part of the sponge; one or two ounces will be enough for this purpose. When the inhalation is going on, it is better to pour the ether on the outside of the sponge, so as to avoid the necessity of removing it from the face. From half an ounce to an ounce should be used at a time in this way, till anæsthesia

is produced. When this takes place, the patient is wholly unconscious, and has no control over the voluntary muscles. He is unable to raise his eyelids when told to do so, and gives no indication of hearing or consciousness, if spoken to in a loud tone. The pulse usually becomes slower than the ordinary standard, though at the beginning of the inhalation it is quicker.

It is, I am confident, a perfectly safe anæsthetic agent. I have not been able to find any well attested case of death from its inhalation. There may have been such, but they have never come to my knowledge, though I have taken unwearied pains to obtain information on this point.

It has been said, that this may be attributed to the fact that ether is not extensively used, but that if it were, there would probably have been as many fatal cases in proportion from it, as from the inhalation of chloroform. But this statement is not strictly correct; for though ether is not employed as an anæsthetic agent to any extent, if at all, in Great Britain or many parts of Europe, it is used in Lyons, Naples, and is almost the only one that is administered in the principal hospitals of the United States of America, where its now familiar properties were first discovered.

I have given it in several hundred cases, and witnessed its exhibition by others in as many more. I have administered it to infants not three weeks old, and to persons more than three-score years and ten, and have never in a single instance seen an alarming or distressing effect produced by it. On the first introduction of ether into surgical practice, it was not thought safe to allow persons to inhale it in whom there was reason to believe there was any disease of the heart or lungs, or who had any tendency to an affection of the brain and nervous system. But for some years past I have been in the habit of administering it to individuals of this description, and have as yet had no cause to regret it. In such cases I have thought it prudent to have the vapor of the ether inhaled more slowly, so that it may be more diluted with atmospheric air than under ordinary circumstances; of course, the patient could not be brought as soon under its influence as when taken in the usual way.

The state of the system which is produced by the inhalation of ether is that of narcotism, similar precisely to what is induced by drinking immoderately wine or other alcoholic liquors. It is a state of intoxication more transient and less dangerous than that from alcohol. Its effects pass off sooner, because the vapor of the ether begins to escape from the lungs as soon as the patient ceases to inhale it; while alcohol taken into the

stomach is carried into the circulation, and mixes with the blood, and in this way acts longer, if not more powerfully on the brain, though its narcotic effect is not so soon produced. It is possible that life might be destroyed by the inhalation of ether, if it be continued uninterruptedly for a great length of time and a great quantity inhaled. Fatal congestion of the brain might thus be produced, as sometimes happens when alcoholic liquor has been taken to excess. But no person of ordinary prudence would administer it in this way. Long before the occurrence of such a result, symptoms of an unequivocal character would indicate the approaching danger.

When death follows the inhalation of chloroform, on the other hand, there is no merciful premonition. The late Dr. Snow, whose experience on the subject was, perhaps, greater than that of any other person, thought that "*sudden palsy of the heart* is the cause of sudden death from chloroform." In death by asphyxia, the heart beats for some minutes after breathing has ceased; "whereas in some cases of death by chloroform, the breathing has been proved to go on up to the time the pulse stopped, and after it."

With the hope that those who may have occasion to employ any anæsthetic agent, will at least make a fair trial of *rectified sulphuric ether*, I respectfully submit these remarks to my professional brethren.

CHRONICLE OF MEDICAL SCIENCE.

MEDICAL PATHOLOGY AND THERAPEUTICS.

1. *Chloride of Sodium in Phthisis.* By RICHARD PAYNE COTTON, M. D.

So little do we understand the immediate cause of the formation of tubercle, and so unsuccessful has been every attempt to make a direct impression upon the so-called tuberculous *crasis*, that it becomes not only legitimate, but actually desirable to try the effect of different agents, even though the practice be empirical,

and the success of the experiment doubtful. With this view, I have for some time past been administering various substances to the phthisical patients under my charge in the Consumption Hospital, and carefully examining the results. My habit has been to make no selection of cases, but to take them at whatever stage of the disease, and under whatever circumstances they might happen to present themselves—those only being excluded in which either some active symptom or unusual complication demanded more immediate and decisive treatment. Each observation has been made upon twenty-five cases, this number having been chosen as readily showing the result per cent. by the simple process of multiplying by four.

In the present communication I shall speak of the effect of the chloride of sodium.

This substance was administered to twenty-five patients, thirteen of whom were males, and twelve females; their respective ages varying 16 to 38, the majority being about midway between these two numbers. In seven cases the disease was either in the first stage, or the very commencement of the second; but in the rest there was distinct evidence either of tubercular softening or actual vomicae. To the copious and accurate notes made by Dr. Maxwell, the resident Clinical Assistant at the hospital, I am chiefly indebted for the results of the trial.

The salt was dissolved in water, and given in doses varying from one to three drachms, two or three times a day, the smaller quantity generally being prescribed at first, and gradually increased; a little compound tincture of lavender was added merely to disguise it. According to its effects, it was continued for a period varying, in the different cases, from two to eight weeks. It was found that one drachm could generally be taken without nausea; but in a few instances two drachms produced some degree of sickness, and three drachms caused vomiting, although, as a general rule, and in the majority of cases, these larger doses did not seem to disagree with the stomach. In two patients one drachm frequently gave rise to nausea, if taken upon an empty stomach, while two or even three drachms could be taken with impunity by the same persons soon after meals.

In fifteen cases the appetite either remained good, or became so during its administration; and in seven the appetite was either bad at first, or was lost under its use. In eight of these fifteen cases the increase of appetite was fairly attributable to the chloride; but in four out of the seven the salt was as fairly chargeable with its loss; thus showing the different effect of the chloride upon different individuals. In only three

cases was thirst complained of, and this was generally remedied by freely diluting the solution.

Fourteen patients visibly improved while the salt was being taken—such improvement consisting principally in the increase of strength and appetite, and the diminution of cough and other general symptoms; eight patients as visibly became worse in their general condition; and three seemed to remain in every respect unchanged.

In four instances there was a manifest improvement in the physical signs; in six the pulmonary or local mischief as manifestly increased; and in fifteen there was no evidence of much change either one way or the other. It was singular that by far the greater number of cases of improvement, either in general symptoms or physical signs, occurred in the male sex.

Thirteen of the patients increased in weight—the minimum increase being one pound, and the maximum six pounds; six lost weight—the greatest loss being three pounds, and the least one pound; and in six the weight remained as nearly as possible stationary.

A large amount of chlorides was always found in the urine of those who were taking the salt; but so little in comparison with the quantity administered, that much must have either passed off by the bowels or remained in the system. No unusual amount of diarrhœa, however, attended its use. The search after chlorides led to the discovery that the urine of all phthisical patients, even of those in the last stage of the disease, contains such compounds in considerable quantity.

The remarkable circumstance, so often noticed in the treatment of phthisis, that while the general health and condition are apparently improving, the local disease is nevertheless advancing, presented itself in two well marked instances.

In estimating the effect of remedies, particularly in hospitals—and in none more so than in that at Brompton—it is necessary to make proper allowance for the influence of concomitant circumstances. Improved diet, rest, hygiene, and hope, have a wondrous effect upon every kind of disease; but after carefully weighing the probable action of such agencies, I have arrived at the following conclusions, viz:—

1. Chloride of sodium in some cases increases the appetite, and acts as a general tonic.
2. In doses of one or two drachms gradually administered, it seldom produces either nausea or derangement of the digestive organs, or occasions any considerable degree of thirst.
3. Its tonic influence in phthisis may fairly rank with many other tonics, such as bitters.
4. It does not appear either that chloride of sodium is a

substance deficient in the tuberculous crasis, or that it has any direct effect upon the phthisis when fully developed.

Clarges-street, Piccadilly.

2.—*Grave Pneumonia speedily relieved by Ergotine.*

WE recollect having seen Mr. Maisonneuve exhibit with advantage syrup of ergotine in that form of pneumonia which is frequently observed in consumptive subjects, and is attended with sanguineous exhalation. Ergotine is a powerful hemostatic, and we find, in the *Gazette des Hôpitaux*, a fresh case of Dr. Thibault, du Pertre (Ille-et-Vilaine), which seems to prove that the sedative virtues of this drug may, in certain varieties of pneumonia, make it a useful substitute for oxy-sulphuret of antimony and tartar emetic.

In October 20, 1858, Mr. Thibault was summoned to a patient suffering for four days from pneumonia in the first and second stages. The pulse was full and vigorous, and had risen to 95; oppression was considerable, cough moderate and productive of rusty sputa. 20 ounces of blood were taken from the arm, and phlebotomy was repeated in the evening. On the following day, eight leeches were twice applied, at an interval of twelve hours, to the left side. On the 22d, slight improvement had taken place, the oppression had decreased, and the pulse had diminished in frequency. Tartarized antimony was prescribed; but, having been rejected by the stomach, was replaced by kermes mineral. On the 24th, the patient was worse, the pulse was small and frequent, at 105; the countenance had undergone an unfavorable change, much prostration was present, and the expectoration had the color and appearance of the juice of stewed prunes. On the 25th, hœmoptysis occurred twice, and the patient was troubled with delirium and carphology. For the purpose of modifying the character of the expectoration, indicative of suppuration of the lung, with but slight hopes of attaining his object, Mr. Thibault prescribed the following mixture:

R. Aquæ.	. . . . .	3 ℥
Ergotinæ.	. . . . .	1 ℥
Antimon. oxy. sulphuret.	. . . . .	} aa. 3 gr.
Pulveris scillæ.	
Gum. tragacanth.	. . . . .	1 ℥
Syrupi simplicis.	. . . . .	10 ℥

F. S. A. To be taken in table-spoonfuls every hour.*

* Mr. Maisonneuve exhibits the *syrup of Bonjean*, which is prepared by the addition of a solution of 2½ dr. of ergotine in one ounce of orange-flower

Scarcely had the patient taken three or four doses when the appearance of the sputa was changed. They first became rusty, and subsequently merely yellowish, as in common catarrh. Mr. Thibault was also struck with another equally singular circumstance, viz., the decrease of feverishness; the pulse fell from 105 to 80 and 75, without however acquiring strength or fullness. The medicine was interrupted and the expectoration again became rusty; but recovered a more healthy character, when the medicine had been resumed twenty-four hours. On November 2, the patient was rapidly progressing towards health.—*Championniere's Journal*.

3.—*Carbonic Acid Gas as a Local Anæsthetic Agent.* By
H. O. HITCHCOCK, M. D.

THE following cases were treated in Bellevue Hospital. I am induced to report them, hoping that more experiments may be instituted, and more facts brought forward, bearing upon this subject.

CASE I.—Margaret M. was suffering from an ulcer, granular, red, and tender to the touch, upon and within the cervix uteri. During the course of treatment she frequently suffered from severe pain in the back and down the thighs.

Various remedies were tried, topical as well as general—opiate, and other sedative suppositories—but with no, or but temporary, relief to the pain. As a last resort, and as an experiment, carbonic acid gas was applied to the vagina and neck of the uterus. It was administered with rather imperfect apparatus, but with such complete relief to pain as to induce us to resort to its use again. Within five or ten minutes from the commencement of its application, the patient assured us that she began to experience relief. The gas was applied for fifteen or twenty minutes with almost complete relief of all her pain; and she had no more pain of consequence for four or five days.

This treatment was resorted to in this case four or five times, and in every instance with the best result.

On one occasion, I examined the ulcer before the application, and found it red and granular, like a ripe strawberry, and very sensitive. After the application, it was much smoother,

water, to one pint of boiling syrup. This compound contains eight gr. of ergotine for every ounce, and is prescribed in tea-spoonfuls 4 times an hour, in hæmoptysis.

H. C.

and the ulcer and the whole mucous membrane were of a paler color than before.

This patient repeatedly assured me that, after the application of the gas, she was almost entirely free from pain for a full week. At any rate she did not complain; which is pretty good evidence that her testimony of its effects was true.

CASE II.—A woman, aged twenty, married but without children, was suffering from acute suppression from exposure to cold and wet on the second day of menstruation. Pain in back, loins, and abdomen, were intense; pulse 120, sharp and quick. She sometimes had paroxysms of pain very severe, in one of which she seemed near dying. Soon after her admission, carbonic acid gas was applied to the vagina and cervix, with speedy and complete relief to her pain, which continued for two or three days. The gas was applied in this case two or three times—always with the same result. The patient, under accompanying treatment, soon recovered, and was discharged.

CASE III.—A young woman, aged nineteen, married, was suffering almost precisely as the last case, and from the same cause. When admitted, she complained of very great pain, and extreme tenderness extending over the whole abdomen—the slightest pressure causing intense pain. The vagina was hot and dry; the cervix uteri hard, swollen, immovable, and very tender to the touch. The tongue was heavily coated, bowels had been constipated for a week, and the abdomen was considerably tympanitic. She had repeatedly had green vomiting before coming to the hospital. Decubitus was at first dorsal, with legs drawn up—afterwards lateral. Face red and anxious; skin hot and dry; pulse 130; sharp, quick, and small.

Twenty-five leeches were applied to the hypo-gastrium, and carbonic acid gas to the vagina and cervix uteri.

The gas was applied about four o'clock P. M. In ten minutes after the patient said she began to experience relief. The application was continued thirty minutes, when there was complete relief of pain in the womb and thighs. This relief continued all night, and the patient slept much more than she had done before.

There was some relief of the tenderness of the abdomen, though not so much as we had hoped for.

The next day, and for three or four days after, the gas was applied with the same entire relief of pain; and the patient soon left the hospital, well.

For the purpose of local anæsthesia, carbonic acid may be generated from common chalk and hydrochloric acid, in an

ordinary inhaling apparatus. If the application is to be made to the vagina and uterus, a simple rubber tube will connect the apparatus with the speculum, and the acid being added gradually, through the open tube in the top of the apparatus, the gas can be made as rapidly and abundantly as desirable. If it is wished to apply it to a painful blistered surface, or to an irritable or painful ulcer, the gas can be carried under a piece of oiled silk, or of gutta-percha tissue. [Peninsular Journal.]

4. Vaccination. By JUDGE MEIGS.

Among the very valuable pamphlets collected by my learned and excellent friend, Dr. Mitchill, I find one published about fifty years ago in Paris, by Louis Valentin, M. D., member of many national and foreign societies. Montpellier, 1805.

On his title-page, he quotes Fontane's Eulogy of Washington: *L'Audace détruit, le génie élève, le bon sens conserve et perfectionne*. "Boldness destroys, genius elevates, good sense preserves and perfects."

He says: Edward Jenner was born in 1749, May 17, youngest son of the Rev. Stephen Jenner, Rector of Rockhampton, Vicar of Berkeley, Gloucestershire, England. He was well educated. The celebrated Hunter esteemed him.

Among many discoveries Jenner made, one was a new and easy method of obtaining *tartar-emetic pure*. Also, the true cause of *angina pectoris*, commonly attributed to Heberden. And Dr. Parry published, at Bath, his work ascribing to Jenner this discovery. But Jenner's researches on cow-pox from the year 1776, his industry, and his extreme modesty, distinguish him.

The opinion had been entertained among the dairy people of England, *from time immemorial*, that the *milkers never caught small-pox!* All the physicians denied the prophylactic power of cow-pox. This moderated Jenner's ardor, but he soon found out that the cow was subject to pustules of different natures—one being preventive of small-pox—the other not.

Jenner published his discovery in June, 1798. In July following, Mr. Cline, the very able surgeon of the Hospital of St. Thomas, vaccinated an infant with matter sent by Jenner. This was the first vaccination in London.

The reputation rendered Jenner's residence in London necessary. He left behind his beautiful home, and commenced an immense correspondence on vaccine disease. In 1803, the Royal Jennerian Society for the extermination of small-pox

was organized, in the month of June. He was soon elected mayor of Cheltenham. In 1802, Parliament had voted him £10,000 sterling, (\$50,000.)

Dr. Waterhouse, of Cambridge, Massachusetts, said that Jenner was entitled to the palm for effacing from the catalogue of human evils *one of the most terrible*. Jefferson, the President of the United States, wrote to Dr. Waterhouse, that the altar to Jenner would claim the title for him of *multiplying the human race*. Dr. Lettsom said, "he has most happily invoked the Goddess of Health, and arrested pestilence and death!"

He searched Great Britain for the past knowledge of vaccine, and found abundant evidence that cow-pox had a very long-time been known in Wilts, in Somerset, Gloucestershire, and Staffordshire; and Dr. Gibbes, of Bath, said that going to Oxford, where small pox was prevalent, asked his man-servant if he was not afraid of it? The man said, "No; I have had the cow-pox at my fingers' ends."

Dr. Jenner related of the Duchess of Cleveland, a very beautiful lady of Charles Second's time, that one of the company said she might perhaps catch the small-pox, and lose all her beauty! She replied, "No! I am not at all afraid of it, for *I have had the cow-pox!*" And Jenner believed that this vaccine prophylactic had been known in Ireland five hundred years, by the name of *shinnaugh*.

Some say, since this cow-pox is known, "that it existed and was known long ago, and required no extraordinary effort to find it out!" *Agreed*. It is, however, precisely the simplicity of the thing which constitutes its merit. No man before Jenner had made the public know it!

See the History of Vaccination in Turkey, Greece and in the East Indies. By J. De Carro. General Journal of Medicine, vol. 19, page 103.

Mons. Edward Fournier has published in Paris, this year, his *Vieux et Neuf, old and new*, Ancient History of the Inventions and Discoveries of the Moderns, in two small duodecimos, of 450 pages each. He follows Dutens, whose work on the Discoveries of the Ancients, attributed to the moderns, published half a century ago, was very interesting.

Fournier undervalues Jenner's discoveries. He says the Hindoos used the vaccine from time immemorial; that they threaded needles, passed them through the vaccine pustules, and passed the needle between the skin and flesh in both arms of infants. This is mentioned in the sacred book written by the Hindoo Esculapius, *Dhanwantari*, which is called the *Sateya Grantham*.

La Condamine, in 1754, wrote a memoir on Innoculation, for the Academy of Sciences, in which he asserts the practice to have been common in Circassia, Georgia and Greece.

Germany claims vaccination as far back as 1668.

The Allgemeine Unterhaltungen, a journal, says that the German Goetz discovered cow-pox, and that a learned treatise was written on it in Gottingen in 1668.

Chloroform.—In 1681, Papin wrote on surgical operation without pain, and clearly pointed out the anæsthesia, (loss of feeling.) He was afraid to publish it, but gave it to Dr. Boerner, one of his old friends, and to his heirs. This old manuscript, yellow with age, was fortunately bought by the librarian of the Elector of Hesse for some Louis, and now fills an honorable niche in his library.

Homœopathy 200 years before our Saviour.—Polybius, the Greek historian, son-in-law of Hippocrates, wrote an Essay on the Nature of Man, in which he gave out the notion of cure by *simili similibi*, like by like, and Hahnemann is supposed to have taken the hint from it. Their recommendations of violent poisons as medicines is borrowed from Avicenna, the Arabian philosopher and physician, who died at 58 years of age, in 1036. He wrote fifty pages a day without fatigue, and on almost every science. He prescribed arsenic in some cases. Paracelsus said, "Mercury to drive out mercury, sulphur sulphur—not as *water to drive out fire*—by contraries. The celebrated Des Cartes was taken in by this logic of like by like, tried it, and nearly killed himself. He *took brandy to cure a fever!* Heat to heat. Hahnemann was more lucky, for he took *quinquina to cure his fever*, and that, he supposed, was the grand secret of homœopathy.—*Am. Med. Gazette*.

5. On the Therapeutic Properties of Sarsaparilla. By Prof. BÖCKER, of Bonn.

Dr. A. M. Adam, in some interesting Medical Notes from the Continent, refers to some experiments by Prof. Böcker upon sarsaparilla, as yet unpublished. Dr. Böcker told Dr. Adam, "that after carefully performing ninety-eight experiments with this drug on healthy people, he found that, contrary to all our usually received opinions on the subject, it possesses neither diuretic nor diaphoretic properties. Another series of twenty-six experiments, on the persons of uncured syphilitic patients, gave exactly the same results. Böcker also

satisfied himself that sarza does not increase the efficacy of the agents, such as iod. potass., &c., which are usually given along with it; and that the good results obtained by the administration of this salt, dissolved in decoction of sarza, are in no degree attributable to any virtue in the solvent fluid. I told Dr. Böcker that I remembered hearing Professor Syme, many years ago, express his opinion on the utter uselessness of so expensive a drug as sarza, remarking, in his own quaint, forcible style, that he believed an 'infusion of hay' would be just as good, and a vast deal cheaper. He seemed amused, and said that he entirely agreed with Syme; that infusion of sarza had no greater effect on the system than so much common tea; and that we must regard it merely as a pleasant, but very expensive, vehicle for the administration of other medicines.—*Journal of Pharmacy*—(From *Edinburgh Medical Journal*.)

SURGICAL PATHOLOGY AND OPERATIONS.

1. *The Modern Treatment of Stone in the Bladder, and its Results.*

At page page 32 of the *Medical Times* for January of the present year the reader will find a statistical analysis of 126 lithotomy operations performed in the different London hospitals during a period of three years and a half. At page 13 of the *Journal* for July 2d is a similar analysis of the cases operated on in certain Provincial hospitals during a nearly similar period, and numbering 177.* The results of lithotomy in London practice were similarly investigated at page 59, January 15th, and those of the same operation in the Provincial institutions at page 35, for July 9th. Lastly, we took under investigation the operations for stone in the female, which, including the London and Provincial institutions together, numbered 13, and which may be found cited with detailed comments in our *Journal* for July 23d, page 82.

We now propose to take the whole together, and to institute

* Since that report was published, we have discovered that the cases operated on during 1856 were accidentally omitted. They will, of course, be now included. It is a remarkable and interesting fact, as showing that our calculations do very closely approximate the actual truth, that the addition of this year's cases, 45 in number, does not make any appreciable alteration in the proportionate numbers as regards age, recovery, etc., etc.

comparisons, first between the results of London and Provincial practice, and, secondly, between those of lithotomy and lithotrity.

If we could add to our list the cases in which, during the same period, and in the same hospitals, the patients have died of stone without having been operated on, our balance-sheet would be yet more complete. A certain number do so die every year. We should suppose that it is very small, probably not amounting to more than half-a-dozen annually in all the London hospitals taken together. We have recently noticed the fact of several such deaths. They usually occur in patients admitted in the last stages of suffering and debility, who sink within a few days of their admission. In respect to London Hospital Practice, from long personal experience, we can speak most positively, that it is not the custom to refuse any cases, however bad. If any sort of selection had taken place, the London statistics would appear to far better advantage than they do. Many of the deaths after lithotomy happened to patients whose state was such that any surgeon could have brought himself to regard his own reputation for success as of the first consequence, and his patient's chance of benefit as of the second, would have been most certainly refused. Indeed, in more than one instance which we well remember, the operation scarcely afforded any better prospect to the poor sufferer than that of mitigating his misery during his few remaining days or hours. Against these cases, however, we must put two or three in which recovery ensued under the most unhopeful circumstances, and when the operation had been performed only at the patient's urgent request. These latter have been sufficiently numerous to most fully justify the rule adopted by metropolitan surgeons, of always operating, however ill the patient may be, provided there appears to be no hope of improving his general health by preparatory treatment. Whether or not this rule is carried out to the same extent in our Provincial hospitals, we do not know. If it is not, the difference in result between the London and Provincial institutions is to a certain extent accounted for.

*General Results.—(Both Sexes).—*The total number of stone cases coming under surgical treatment during the periods referred to, including females, appears to have been 467. Of these, 386 were cured, 3 were discharged unrelieved (after lithotrity), and 78 died. In 408 instances, lithotomy was performed (all ages, but chiefly children), with 341 recoveries, and 67 deaths. Lithotrity was performed in 37 instances (all but one adults), with 23 recoveries, 2 subsequent

lithotomy cases, 3 discharged unrelieved, and 9 deaths. The cases of stone in the female were 24; and of these, 22 recovered, and 2 died. The aggregate fatality of operations for stone would thus appear to be 1 in 6 in males, and 1 in 12 in females.

Throughout the remainder of our report, we shall exclude the 24 cases of stone in females, and deal only with the 448 cases occurring in males.

Comparison between London and Provincial Practice.—(Males Only.)—The relative proportion of cases treated by lithotomy and lithotripsy respectively appears to be about the same in our London and Provincial institutions. The same rules of selection appear also, with some exceptions, to prevail in both, as well as in individual hospitals. Lithotripsy is, as a rule, never performed in children; and the circumstance of the patient being in unusually bad health is regarded as a reason for preferring lithotomy. In one or two instances, however, the reports supplied to us state that the stone was crushed because the man was thought too ill to bear the larger operation; but these are very exceptional. The selection of the one or other operation for adults in good health appears, however, to have been very arbitrary, and has, we believe, in many instances, been decided by the patient's own preference. It does not appear, judging from the data before us, and from what we know privately, that any of our hospital surgeons make it an invariable rule of practice to employ the lithotrite in all cases of stone in adults of fair general and local health.

The appended statement gives the aggregate results of the two modes of operating:

METROPOLITAN.

Whole number,	207;	recovered,	157;	died,	47;	1 death in	4·4.
Lithotomy	. 186;	"	146;	"	40;	"	4·65.
Lithotripsy	. 21;	"	11;	"	7;	"	3.

PROVINCIAL.

Whole number,	238;	recovered,	207;	died,	29;	1 death in	8.
Lithotomy	. 222;	"	195;	"	27;	"	8·22
Lithotripsy	. 16;	"	12;	"	2;	"	8.

In the first of the accompanying tables the same cases are classified according to the ages of the patients, both lithotomies and lithotrites being taken together.

Thus, then, we have the fact brought clearly out, that of every four cases of stone in males (all ages) submitted to surgical treatment in the London hospitals, one ends fatally, while in the Provincial institutions the fatality is only one in

eight. Before attempting to ascertain the probable causes of this startling difference, two questions present themselves for answer. In the first place, Are the two series of cases sufficiently alike to be properly made the subjects of comparison? And in the second place, Are the data of which they consist equally trustworthy in both? The first of these we would answer without hesitation in the affirmative; the two series of cases do bear a very close similarity to each other, *i. e.*, in each the relative proportions of patients at different ages closely correspond, while nearly the same rules appear to have influenced the minds of the different operators as to the performance of lithotomy or lithotrity. In the latter point, indeed, the advantage is rather on the side of the Metropolitan series, since it includes a larger proportion of lithotrity cases, which, as we shall hereafter see, is the less fatal operation in the adult. In replying, or attempting to do so, to the second question, we tread on different, and very delicate ground. It must, we think, be granted that the accuracy of the two series is not equally well guaranteed. Both in London and in Provincial hospitals, our statistical reports have been, in the first instance, compiled from data supplied to us by the resident medical officers of the respective institutions. Thus far, therefore, the modes of procedure, and the probability that all cases would be recorded are the same in each. In London, however, the writer of this report was himself engaged in daily attendance on the practice of the different hospitals, and was in the frequent habit of looking through the "Operation Books" himself. Without making the slightest reflection on the integrity of those to whose zeal we are indebted for the Provincial data, the simple statement that the additional security of completeness just mentioned, was in the case of their institutions not brought to bear, will be sufficient to prove that the facts in the two series are worthy of different degrees of reliance. We may venture to strengthen the proof by stating that in certain instances cases did find their way into our London list of deaths, through our own personal supervision, which would not otherwise have done so. We shall leave this matter, and our readers must form their own conclusions as to the allowance which ought to be made on the ground referred to.

Whatever allowance individual readers may incline to make on the score above mentioned, none can entertain a doubt that our statistics really prove that a great difference in result does obtain in our Provincial and our Metropolitan hospitals. The apparent difference is so great, that it is impossible but that a considerable part of it must be real. It will be seen

also that it is almost equal, whether we examine the lithotritry series or the lithotomy one. To what, then, are we to attribute it? We may fairly presume that the amount of surgical skill to be met with in the two series of hospitals is equal, and we believe that the same rules of practice prevail in each, *i. e.* the ordinary lateral operation was performed in almost all the cases. We have already observed that the ages of the patients very closely correspond. Two circumstances remain for consideration as possible causes of the difference. 1st. The Provincial hospitals may possess great sanitary advantages over our London ones. 2d. The class of patients admitted under Provincial surgeons may possess far better constitutions as regards ability to bear severe operations, than do those who enter our London hospitals. Probably both these suppositions are true to a certain extent, but the latter has, we suspect, vastly the wider range of influence. Let us glance at the following facts:—Out of 109 children under the age of ten lithotomised in the London hospitals only 8 died, and exactly the same number was lost of 113 patients of the same age operated on in the Provincial ones. Here the London fatality is 1 in 13.5, and the Provincial 1 in 14, in fact, the results scarcely differ, whilst the whole number is quite sufficient to supply data for fair comparison. Now, if the sanitary advantages of the two series of hospitals were very different, ought not the effect to be at least equally apparent in the case of young children as it is in that of adults? As we leave the age of infancy, the difference, however, becomes marked, and it increases almost steadily with each decade. Between 10 and 25 the London fatality is 1 in 5, and the Provincial 1 in 9. Between 25 and 45, the London deaths are exactly in twice the proportion of the Provincial ones. Between 45 and 60 the difference is much greater, London losing one-half and the Provinces only 1 in 5. In the oldest class of patients, that is, those between 60 and 80, the metropolitan mortality reaches its alarming maximum of three-fourths of the whole number, whilst in Provincial institutions it is only one-third. Do not these facts prove to a demonstration that there is a very great difference in the power of recovery after lithotomy, between our London and Provincial patients? The adult subjects of lithotomy in London are of two classes, those who have resided in the metropolis, and those who have been sent up from the country expressly for the purpose of operation. Probably the former of these two classes would include two-thirds, and the latter one-third of the whole, but in this matter we have no ascertained data to guide our conjecture. We need not here enlarge on the bad state of constitutional stamina in London

adults of the poorer class, since it is sufficiently known. Intemperance, irregularities of all kinds, and city life do their work, and their effects usually become increasingly apparent as age advances. On the second class—that comprising cases sent up for operation from the country—we will venture one or two remarks. As a rule we do not believe that our provincial *confrères* select their best cases to send to our London hospitals. At any rate, of this we are sure, that some of the very worst in the whole series were patients who had been so sent up for operation. Not unfrequently there is a history that lithotripsy has been repeatedly tried, but that the bladder becoming more and more irritable and the patient's health failing, the case has been sent up to town for further measures. Then again, even supposing that our patients from the country were of average health, it is easy to see that their transference to the wards of a London hospital, is likely to exert anything but a favorable influence. To a naturalised Londoner a London hospital is a sort of palace, but its effects are very different upon a farm laborer who has been accustomed to the air of the Kent downs.

Comparison between Lithotomy and Lithotripsy.—The reader will find on another page a concise tabular statement of the results of Lithotripsy, both London and Provincial. The whole number of cases is but small.

The table in question shows that out of a gross total of 35 cases treated by lithotripsy, in which the patients were between the ages of 20 and 75, twenty-two resulted in recovery, four were unrelieved, and only nine ended in death. Granted that the rate of mortality is large, and far from satisfactory, it still contrasts favorably with that of lithotomy in patients between the same limits as to age. The gross fatality of lithotomy in adults, taking London and Provincial cases together, is rather more than one in three, while that of lithotripsy is one in four only.

Taking the London cases by themselves, we find that between the ages above mentioned, rather more than half (26 out of 49) die after lithotomy, while only a third (7 out of 21) die after lithotripsy. It must be remembered, however, that three cases treated by lithotripsy remained unrelieved, and while in more than one instance the same patient was treated for a relapse of symptoms a year or two afterwards, his case is counted twice.

Taking the Provincial cases by themselves, we find that between the ages mentioned, not quite one-fourth die after lithotomy (18 in 74), while the lithotripsy mortality rate is only one in seven and a-half (2 in 15). Two of the lithotripsy pa-

tients were, however, after long treatment, finally submitted to lithotomy, and the remark made above as to the unavoidable multiplication of cases by counting the same twice, applies, we believe, with equal force to the Provincial as to the London series.

Allowing, then, that to a certain extent the best cases are selected for lithotomy, we cannot say that the results obtained are very triumphantly in favor of that operation. Still the balance of evidence, especially in patients past middle life, is certainly, and beyond dispute, to its advantage.—*Medical Times and Gazette.*

2. *Tracheotomy in Croup—Hospital St. Eugénie.*

1. *On what symptoms, at the different periods of croup, do the house-surgeons of the Hospital for Infancy resolve upon performing tracheotomy?*

2. *What symptoms induce them to abstain?*

3. *What symptoms lead them to temporize?*

The house-surgeons of the hospital have the honor to make the following replies to the preceding questions:

I.—It is important to divide croup into three periods:

1. A first period, or one of *confirmed* croup; 2, a second period, or one of *progressive dyspnœa with paroxysms of suffocation and incipient asphyxia*; 3, a third period, or one of *confirmed asphyxia*.

1. In the first period, the larynx being invaded by the false membranes, the voice and the cough are husky, and subsequently lost; dyspnœa is not yet decidedly present and the general condition of the patient is tolerably satisfactory.

In this first stage, no thought is ever, *no thought can ever be entertained of tracheotomy.*

2. The symptoms of the second period are a more frequent, more laborious respiration, with laryngo-tracheal wheezing, considerable depression of the epigastric cavity, extinction of the cough and voice, frequent pulse, lowness of spirits with somnolence, or, on the contrary, continual agitation.

When a child is brought to the hospital in these conditions, the house-surgeon on duty carefully inquires into the history of the symptoms and what pressure soever may be exercised on him by the parents or the medical practitioners from without *he does not operate immediately*; but he without delay exhibits an emetic *exclusively consisting of IPECACUANHA* and not of TARTARIZED ANTIMONY, the effect of which is disastrous. He then attentively superintends the action of the emetic, the re-

sult of which is most frequently to determine the rejection of mucus or of false membranes, and thus to diminish by so much the dyspnœa. Some few hours are thus gained, during which the house-surgeon watches the child. If its state remains the same, he temporizes until the arrival of the physician; but if, on the contrary, he sees the difficulty of breathing rapidly increase, the general symptoms aggravated and paroxysms of suffocation frequent and at short intervals, *he then operates*.

3. In the third period, two varieties must be distinguished: *asphyxia with cyanosis* and *asphyxia with paleness*.

In both these varieties, the phenomena of the second period have arrived at their maximum of intensity.

Only, in the case of *asphyxia with cyanosis*, there is swelling of the face with purple coloration, the lips are bluish, the eyes humid and prominent, the veins of the neck considerably swollen, the pulse innumerable, the skin hot and covered with perspiration, anxiety extreme, agitation considerable, and occasionally the child becomes rigid, as if in a supreme effort.

Whereas, in the case of *asphyxia with paleness*, the face is remarkably livid, the lips pale and marbled with violet, the eyes dull and the pupils dilated; the body, cold and covered with clammy perspiration, is in a state of complete collapse; and the patient, already almost cadaverous, indifferent to everything around, is at the extreme ebb of life. Even in this case, anæsthesia may be wanting, and this sign thus loses all its value.

Now, in *asphyxia with cyanosis* as in *asphyxia with paleness*, the house surgeon on duty *operates immediately*.

II.—The house-surgeons of the Hospital for Infancy are deterred from the operation by *the too tender age of the patient*, by manifest introduction of the morbid poison into the system, or *generalized diphtheritis*.

Age.—The house-surgeons do not operate on children under two years of age, and reluctantly on children under two years and a half.

Manifest general infection.—This state is marked by the simultaneous existence of livid paleness, of swelling of the sub-maxillary, cervical and sometimes parotid glands, with general tumefaction of the neck, and by an œdema unconnected with the glandular swelling. At the same time, the breath is fetid, the pulse remarkably small and feeble, and yet the false membranes are limited to the larynx and to the fauces.

Generalized diphtheritis.—In this case, in addition to the preceding phenomena, a serous coryza is observed with secretion of false membranes behind the ears, at the vulva or on blistered surfaces.

When manifest infection or general diphtheritis is present, death occurring rather by the fact of the infection of the system than as a result of obstruction of the larynx, the house-surgeons of the hospital DO NOT OPERATE. Observation shows that then in reality tracheotomy accelerates rather than retards the fatal termination.

III.—The house-surgeons of the Hospital for Infancy hesitate in presence of thoracic complications, viz. *pneumonia* and *pseudo-membranous bronchitis*.

1. When the operation is evidently urgent, the house-surgeon on duty carefully ascertains whether *pneumonia* is present, and he operates if the pneumonia occupies one side only, and the general condition of the patient is favorable; he abstains if pneumonia exists on both sides.

2. The diagnosis of *pseudo-membranous* bronchitis is very difficult, for in no respect is it clearly different from simple bronchitis. Its existence may be presumed when cylindrical and evidently bronchial false membranes have been ejected. In this case, the house-surgeon on duty is guided, as to the operation by the general state and age of the patient. Pseudo-membranous bronchitis does not constitute a formal counter-indication to tracheotomy; patients, indeed, who have undergone tracheotomy have been cured after having ejected false membranes moulded upon the bronchial divisions.—*Championniere's Journal*.

3. *France—Correspondence of the Medical Times and Gazette.*

PARIS, September 12, 1859.

At the present moment, the hospitals of Paris are deprived of much of the interest which usually attaches to them, in consequence of the absence of many of their physicians and surgeons, several of whom, as is their wont at this season of the year, having gone, as the French say, "*Aux Eaux*," to recruit the energies of mind and body which their arduous duties during the past year are presumed to have lowered or diminished. Velpeau, the star of attraction to the students at "La Charité," disappeared about a fortnight ago, and his place is at this moment supplied by his colleague and friend, M. Manec. Robert and others of note and celebrity at the Hôtel Dieu are also enjoying their autumnal holidays, while their wards are superintended by young men furnished by the Bureau Centrale, some of whom, by the intelligence they display, are evidently destined, in their turn, to follow in the footsteps of their more experienced masters. No class of men, we know, stand more

in need of a temporary relaxation than do the medical attendants on hospitals of a large city; and while we sincerely hope they may enjoy their autumnal rambles, we shall rejoice to see them return endowed with fresh vigor for the work of the coming session. Although between the absence of medical celebrities from the capital and increase of disease, there can be traced no rational connection, it is nevertheless worthy of remark, as a coincidence, that during the last fortnight, certain maladies have become unusually prevalent. Typhoid fever, for example, has increased considerably, while dysentery and choleraic diarrhoea have been prevailing to an alarming extent, not only in the hospitals generally, but also among the more respectable classes of the community at large. The typhoid fever is of a mild type. I have observed sundry deaths from dysentery, but these have happened to individuals much debilitated by previous disease. It is reported that cases of genuine Asiatic cholera have also been met with, but I have not had an opportunity of substantiating the correctness of this statement. I have certainly observed one or two cases in "La Charité," and elsewhere, accompanied with cramps, cold extremities, and other alarming symptoms, but in which the real pathognomonic features of the Asiatic form of cholera were wanting; and it is just possible that the occurrence of some such cases may have given rise to the report. These affections of the bowels may, I believe, be traced to atmospheric changes, taken in connection with the indiscriminate and immoderate use of unwholesome and unripe fruits, which the lower orders indulge in to a great extent at this season of the year. Although the weather is remarkably dry and bracing, still the change from heat to comparative cold, especially in the evenings, has been very sudden, and this circumstance alone is sufficient to give rise to gastric and enteric affections. Add to this, that the public mind is at present kept in a state of comparative alarm at the accounts in circulation of the dreadful ravages of cholera in certain parts of Germany, and you have a *morale* favorable to the production, if not of cholera, at least of diseases of a similar though milder type.

In the department of surgery, the principal occurrence of interest which I have to chronicle is the ligature of the common carotid, which was practised some three weeks ago by M. Chassaignac, at the Hôpital Laribosière, and under circumstances demanding not only great presence of mind, but all the higher qualities which go to constitute a skillful and successful surgeon. In the case in question, M. Chassaignac gave ample proof of the justness of his claims to be regarded as one of the leading operating surgeons of the French capital.

The patient on whom the operation was performed was the subject of a tumor, which appeared externally in the space between the mastoid portion of the temporal bone and the inferior maxillary; and, internally, formed a projecting mass in the back part of the pharynx. This tumor, which the patient had remarked only fifteen days before his entry into the hospital, was fluctuating; and, on minute examination, nothing resembling pulsation could be detected. Several ganglia in the sub-maxillary region were also swelled and hard. Under the impression that it was an idiopathic abscess, M. Chassaignac believed that the best course he had to follow was to make an opening for the evacuation of its contents. With a view to this, he carried a bistoury down to the bottom of the pharynx, and made a small puncture towards the outer edge of the tumor, but neither matter nor fluid of any kind followed. He then made a second puncture towards the inner edge of the tumor, and at a point corresponding with the median line of the pharynx. No sooner was the second puncture effected, than forth came a jet of arterial blood, which but too plainly showed that a serious error had been committed. M. Chassaignac, without a moment's delay, endeavored to arrest the hæmorrhage by thrusting his finger into the patient's throat, and exercising direct pressure over the wound. This proved, as might readily be imagined, of little avail. The blood continued to find its way past the sides of his finger into the mouth and throat of the patient, and produced temporary suffocation. Seeing that compression was useless, as exercised in this way, and the speedy and inevitable death of his patient staring him in the face, he, with an admirable *sang froid*, and great presence of mind, seized the carotid, together with the skin and intervening tissues, between his fingers and thumb, placed the man in a convenient position, and then and there proceeded to the ligation of the vessel *secundum artem*. The moment the artery was seized, the bleeding stopped, and it has not returned since the ligation was accomplished. A circumstance worthy of note connected with the case was the occurrence of complete aphonia almost simultaneous with the tying of the vessel, while distressing headache tormented the patient for several days. The loss of voice, a phenomenon by no means uncommon as a consequence of this operation, (especially when, by accident, any of the filaments of the pneumogastric nerve happen to be injured or embraced in the ligation, it is sometimes permanent,) continued in the present case only some forty hours; thus proving that, notwithstanding the urgency of the case and the consequent absence of the usual preparations which such a delicate and dangerous operation demanded, it had

been ably and carefully performed. The patient's recovery from the effects of the operation is now nearly complete, and his health almost as good as ever. The original tumor remains almost in the same state as before, with this exception, that its upper surface has become firmer and harder, while its interior portion has become softer. The enlargement of the submaxillary ganglia, which accompanied the tumor, has also disappeared. I am disposed to think (although M. Chassaignac does not admit it) that he is conscious of having erred in his diagnosis, and that, notwithstanding the absence of anything like pulsation in the tumor, he now believes it possible that he *must* have had to do with a case of aneurism. Such a mistake might happen to any surgeon, however great his experience; and if M. Chassaignac thinks he has had cause, in the first instance for self reproach, as regards his diagnosis, he has the satisfaction now of having, by his skill and dexterity as an operator, fully repaired by his hands the blunder which his head committed. Supposing the tumor to be of an aneurismal character, (which I think there is reason to believe it was,) the probability is, that the same surgical means thus employed *à l'improviste* would have in the end, and after full deliberation, been had recourse to for its cure.

At the meeting of the Académie des Sciences, on August 29, a most interesting paper, on the Use of Woorara as a Remedy in Traumatic Tetanus, was read by M. Cl. Bernard, on the part of M. Vella, a distinguished physiologist of Turin. I may mention, before giving an abstract of this paper, that as far back as 1850 M. Bernard showed that Woorara, while it destroys the peculiar properties of the motor nerves, exercises but little influence on the nerves of sensation, and that it so acts on the motor nerves as to cause paralysis of them, beginning at the periphery of the nerve and proceeding gradually to its centre; this being an action the reverse of that observed in the ordinary paralysis of these nerves. Muscular contractility is, according to the same physiologist, quite distinct from, and independent of, the nervous influence which calls it into action, for he has proved that after the Woorara poison has completely destroyed the conducting power of the motor nerves, the muscular tissue continues to contract when it is directly irritated by electricity or other stimulants. Proceeding on the accuracy of these views, M. Vella instituted a lengthened series of experiments in 1856, which led him to conclude that there is a direct antagonistic action as regards their effects on the nervous system, between strychnine and Woorara; in other words, that the effects produced on animals by one of these poisons, can be neutralized by the other. M. Vella, who during the

late war was attached to the French Military Hospital at Turin, having observed several cases of tetanus among the wounded, in which the use of opium, ether, and the usual remedies had failed, deemed it a fitting opportunity for the application to the human subject of the experience he had derived from his observation on animals. His first experiments were made on two soldiers, both suffering from tetanus; in the one the affection was of four, and in the other of five days' standing. Both were in a state of demi-asphyxia, and their recovery altogether hopeless: notwithstanding this, however, the application of Woorara was followed by a certain amount of muscular relaxation, and of general relief to the patients, although both, in the end, terminated fatally. In a third case, the experiments were more successful, and the patient was discharged from the hospital perfectly cured. The subject was a French sergeant who had been wounded on June 4, at the battle of Magenta, by a ball which had caused an incomplete fracture of the first metatarsal bone of the right foot, with laceration of the tendons and soft parts. He entered the hospital on June 10 under the most favorable circumstances. Three days afterwards the ball was extracted, and the operation relieved him of much of the pain which the presence of the foreign body had caused him. On the third day after the extraction of the ball, stiffness of the neck made its appearance, attended with difficulty of moving the jaw and the head. There were also slight convulsions, but these were of short duration. The day following the jaws became firmly locked, rendering it at times impossible for him to open the mouth. On the 18th the occurrence of trismus, opisthotonos, and other characteristic symptoms, left no doubt as to the serious character of the disease, and it was declared by all the surgeons attached to the hospital to be general tetanus. The condition of the man was so serious and alarming that M. Vella deemed it necessary to bleed him from the arm for the purpose of relieving the asphyxia with which he was threatened. He then, after having freely incised the wound, administered a powerful dose of opium, but these measures produced no good result. On the afternoon of the same day he decided on the application of Woorara to the wounded foot; the dose being in the proportion of two grains of Woorara to an ounce and a third of water, applied in the form of compress; the strength of the solution was gradually increased until it reached the proportion of twenty grains of the Woorara to nearly three ounces of water. Three-quarters of an hour after the application of the weaker solution, and half an hour after the more powerful was employed, a visible diminution of the tetanic rigidity was the result, followed by such complete muscular

relaxation, that the patient was almost immediately able to drink, to take soup, to urinate, and to sit up in bed. At the commencement of the treatment it was remarked that as soon as the peculiar physiological effects of the Woorara began to pass off the tetanic spasms re-appeared with as much violence as ever, and that the wounded leg was always the first part of the body affected by them. After three days of this treatment a large blister was applied to the thigh, in order to secure a more extensive absorbent surface, and the solution was applied to it as well as to the wound of the foot. For four days the dressings of the entire absorbing surface were renewed every three hours, then every five hours up to the twelfth day, when they were reduced to twice in the twenty-four hours. It was remarked by M. Vella that the wound of the foot and the raw surface produced by the blister were not irritated by the application of the Woorara, as they healed very rapidly. M. Vella resumes his case in the following language:—"The Woorara, which for the first eight days succeeded in rendering greater the interval between the paroxysms, and in diminishing their intensity, ended by making them disappear entirely; and on the 10th of July the patient was able to leave his bed for the first time without experiencing any convulsive shock." On the 15th he went out for an hour, and on the 25th of the same month he left the hospital perfectly cured. M. Vella terminated his remarks by expressing a wish that this novel treatment should be repeated by other practitioners in cases of a like nature; he, however, adds, that the tetanus should be attacked as near its *début* as possible, and before it has too seriously implicated the vital organs, especially the lungs. M. Vella also proposes the same treatment for hydrophobia; the want of opportunity only has prevented him, long ere now, from employing it in that formidable disease.

The reading of this highly interesting paper was followed by a quiet and dignified discussion, in which MM. Velpeau, Serres, Cl. Bernard, Cloquet, Jobert de Lamballe, etc., took part. With the exception of M. Velpeau all these gentlemen were disposed to regard the happy termination of the case recorded as being due to the curative influence of the Woorara, inasmuch as the effects produced by this agent are physiologically opposed in their character to those engendered by the disease it was employed to combat. Velpeau, who maintains that this may have been an exceptional case and a spontaneous cure, would like, no doubt, to subject M. Vella to the same ordeal at La Charité, by which he strangled his friend, the famous "Docteur Noir."

4. *Local Anæsthesia.*

Local anæsthesia is still the order of the day. What enormous assistance would not the surgeon derive from an innocuous anæsthesia, docile to his will, applicable to all, confounding its action with that of the instrument, and exercising its influence merely where the latter produces pain!

Mr. A. Claisse, of Saint Valérien, has recently brought forward a new local anæsthetic agent he has employed for some years, and which, he asserts, allows him to extract teeth, to open whitlows, and to perform other minor operations, without the patient's feeling the least sensation of pain.

Mr. Claisse introduces into a small vial some pulverized camphor, in the proportion of one-third of the capacity of the recipient, and he fills the latter with sulphuric ether. He lightly applies this solution with a small sponge, attached to a piece of whalebone, and for about a minute, either to the gum or any other part on which the bistoury is intended to act, and then he proceeds to operate. In circumstances in which patients raise any objection, experience has taught Mr. Claisse that it is better to repeat the friction.

But the anæsthesia which, since Mr. J. B. Francis' discovery, has occupied most attention, is galvanic anæsthesia. A skillful dentist of Paris, Mr. George, read on this subject, to the Academy of Medicine, a communication, from which we deem it useful to extract the following passages:

"At present," says Mr. George, "I believe, I can point out the two conditions in which a remarkable diminution of pain may be obtained:

"1. *Conditions concerning the present state of the tooth*—As a general rule, insensibility is more certainly attained when the tooth is sounder, more indolent, easier for the forceps to seize, without inflammation of the gum, than in the contrary cases; thus, for instance, when inflammation, swelling, abscesses are present, or when the tooth affords little hold to the instrument, the pain of extraction has appeared to me rather increased than diminished by galvanism.

"2. *Conditions relative to the operating process*—The circumstances I am about to describe also exercise much influence on the effect to be obtained. The following are those I observe: First, I employ the apparatus of Dr. Duchenne, of Bologne, which appears to me the most advantageous.

"The generator is placed under the operating chair; and, instead of ordinary conductors, I have adapted to the arm of the chair and within reach of the patient's left hand a plate of copper in communication with the positive pole by means of the conductor. The negative pole being conveyed by a second wire to the metal of the forceps.

"A small regulating tube, rising to the height of the back of the chair, easily allows the operator to graduate the force of the current required.

"In this state of things, the patient takes his seat on the arm-chair without seeing anything of the apparatus; I request him to lay his hand on the copper-plate, and putting the forceps into his right hand, I ascertain the presence of the current, and thus obtain the necessary degree of faradization.

"The patient then removes his hand from the copper-plate, and I take the forceps from his other hand, and I apply it to the tooth.

"When the tooth is properly seized, and ready for extraction, I request the patient to lay his hand again on the plate, and the current is established. As soon as I am certain of this fact, I effect the avulsion, which takes place almost instantaneously.

"When the foregoing conditions have been punctually complied with, the pain has almost always appeared to me considerably lessened, if even complete local anæsthesia has not been obtained.

"The doubts which have been expressed, in the discussion on this insensibility, may, in my estimation, have arisen from two causes: 1, the use of Garangeot's key, the metal of which very incompletely touches the tooth—the forceps, which embraces a larger surface of the outside, must give a greater and surer galvanizing effect; 2, the operator may have proceeded to the extraction at the time of one of those frequent intermittences of the electric current, to which the very best instruments are liable."

Another highly interesting communication has been made to the same learned society by Mr. Morel-Lavallée, surgeon of the Hospital Saint Antoine.

Mr. Morel-Lavallée has stated that, in sixteen cases, he has extracted teeth without pain, by causing an electric current to pass through the forceps in use in England. In operations with the knife, the results have not been less successful. This surgeon has made five tolerably extensive incisions, and in cases in which the action of the bistoury is usually the most painful, such as phlegmon of the axilla, whitlows and in an abscess inflamed by the presence of a piece of mortified bone.

To proceed to the avulsion of teeth, Mr. Morel-Lavallée availed himself of the assistance of Mr. Bygrave, who, like the greater part of his fellow-practitioners in renown in Paris, has completely abandoned Garangeot's key, an instrument which always bruises the gum and often fractures the alveolus. Mr. Bygrave uses a forceps of variable shape and dimension, according to the tooth to be removed. This forceps has another advantage in the experiments now under review. As Mr. George states in his communication to the Academy, it embraces the crown by a large surface, and thus admits of a more complete diffusion of the current over the decayed tooth.

Mr. Morel-Lavallée had at his disposal Messrs. Morin and Legendre's apparatus of induction, and he proceeded to the operation in the following manner :

The patient held in his hand one of the conductors, the other wire being attached to the forceps which was to be used. Mr. Bygrave then seized the decayed tooth, and the apparatus began to work ; the inductive currents of the first and second order had been united, and the force regulated so as to produce shocks of moderate intensity, easily borne by any one (the graduator being raised to about half its height). The operator received them in the first place ; for with one hand he held his forceps, and with the other he put himself in communication with the subject for the necessities of the operation, but they were so weak as not to diminish the promptitude and certainty of the operation. He found it easy at a later period to isolate himself, by the aid of a silk glove or of a silk handkerchief spread over the patient's head.

To perform incisions, M. Morel-Lavallée first placed one of the conductors in the patient's hand, the other being in communication with his bistoury. But later, having to open an abscess, he contented himself with applying the two conductors to the extremities of the diameter of the tumor, and the incision was performed without the patient being conscious of any pain.

These experiments gave rise to others, and Dr. Fonssagrives, of Cherbourg, communicated to the Academy of Medicine results which fully confirm those already obtained by the skillful surgeon of the Hospital Saint Antoine.

A very large whitlow on the thumb, five ulcerated syphilitic buboes, requiring extensive incisions, necessitated operations which, under the influence of Farady's electrization, caused no other impression than the vibratory formication induced by the re-composition of the currents in the tissues.

From his experiments, Dr. Fonssagrives does not entertain any doubt that, for unimportant operations, a sufficient local anæsthesia may be obtained with the assistance of Messrs. Legendre and Morin's apparatus, and that this process will become a kind of current coin in the practice of minor surgery.

Recently, a surgeon, whom we quoted in our last number, on the subject of the cauterization of encysted tumors, Mr. Alphonse Amussat, performed in our presence a very serious operation of fistula in ano, and, thanks to the intervention of electricity, the patient suffered no pain.

This sinus, the origin of which may be traced as far back as the month of March, 1857, was consequent on a voluminous phlegmon of the margin of the anus ; it bifurcated in its upper

part into a double tract, the principal division of which opened into the rectum, at a height of half-an-inch, and the lower orifice, common to the two divisions, was situated on the perineum, at half-an-inch from the circumference of the anus. The length of the part to be divided was consequently about sixteen lines, and comprised a rather considerable thickness of tissues.

The patient being suitably placed on a tressel-bed, Mr. Amussat introduced into the sinus, communicating with the rectum, a box-wood conductor, the extremity of which he caused to protrude outward; and things being thus arranged and the apparatus ready, the surgeon proceeded to the operation in the following manner: the extremity of one of the wires of the pile was applied to and kept in contact with the left buttock by an assistant, and the operator, with the bistoury fixed to the end of the other conductor, slowly divided the tissues, following the groove of the wooden probe.

We do not intend to speak of the consequences of the operation, which were regular and satisfactory; but what is important to state is, that the patient, a very intelligent man, perfectly able to analyze his sensations, asserted, with an expression of countenance which betrayed agreeable surprise, that he had felt naught but a moderate heat, with a weak vibration and slight local numbness, altogether so undeserving of the name of pain that the impression he felt during the section was less unpleasant than that produced by the introduction of the wooden instrument.*

Now, whether in cases of this description, immunity from pain is due to anæsthesia, local asphyxia, analogous to concussion, or mere revulsion, it is unimportant, if the patient is free from suffering. Let us leave to physiologists the task of solving these questions, and let us rest content with merely collecting the facts best calculated to prove the practical utility of the new discovery, for which we are indebted to America.

* Mr. Amussat used Mr. Grenet's apparatus, composed of two elements (zinc and charcoal); it is the most powerful, in proportion to its size, which has been used in surgery, and measures eight cubic inches. To be put in activity, it must be plunged three-fourths in a bath of water acidulated with sulphuric acid, and containing a quantity of bichromate of potash sufficient for the solution to present the scarlet color of blood. By means of bellows adapted to the end of an India rubber tube, which penetrates into the interior of the apparatus, air is conveyed into the liquid, and the production of electricity is augmented.

5. *Transplantation of the Dura Mater as a Means of Determining its Periosteal Character.* By M. OLLIER.

This paper forms a kind of complement to those we have already noticed as having been read to the Academy of Sciences upon the transplantation of periosteum. While some experimental results, M. Ollier observes, have led a certain number of physiologists to regard the dura mater as a periosteum, clinical observations have not induced surgeons to place much confidence in this membrane for the reparation of osseous parts, which have been removed, whether accidentally or by the trepan. His experimental resections of the cranium have led the author to believe, with several observers, that there are three sources of reparation of the osseous substance—the dura mater, the diploe, and the pericranium. But in consequence of the various difficulties produced by the conformation of the region and the proximity of the encephalic organs, this mode of procedure has not furnished results precise enough to supply a clear and definitive solution. He, therefore, has had recourse to the mode of experimenting which had furnished so peremptory a proof in favor of the theory of the formation of bone by the periosteum, viz: the transplantation of the dura mater to various regions of the body of an animal of the same species. Strips of this membrane, grafted under the skin, in various regions, have given rise to perfectly-constituted bone, possessed of all the anatomical characters of normal osseous substance; and by virtue of this fact we are authorized in regarding the dura mater, not only as a protective envelope for the brain, but as contributing directly to the ossification of the cranium. This property of the dura mater does not continue in the same degree in all ages, diminishing rapidly in proportion as growth is accomplished. Very well-marked at the commencement of life, it has become much less apparent by the time the skeleton has reached its complete development, and is exhibited in a still less degree when adult age is reached. When transplantation of a fragment of the dura mater is accomplished in the adult rabbit, only numerous and independent osseous granulations are produced on its surface. This influence of age explains to us why the facts observed in a man appear so often contradictory, and why surgeons usually only obtain incomplete reparation after trephining. All portions of the dura mater do not possess the property in a like degree, it being only the external surface of the membrane that does so—the fibrous folds not in contact with bone not being susceptible of ossification

on transplantation. The greater proportion of these fibrous tissues at the base of the cranium, added to the difficulty of detaching the dura mater there without tearing it, explains why we obtain in general a more abundant ossification with strips taken from the convexity, than with the fragments of the same size detached from the bone.—*Comptes Rendus*. Tome xlix., p. 206.

6. *Cauterization of Tumors.*

At a time at which cauterization is extending its empire and is taking from the bistoury what it had formerly yielded, it is not uninteresting to see how encysted tumors of the scalp are treated in some of our hospitals.

Few diseases have so much exercised the minds of surgeons. Actual cautery, the seton, partial excision with the razor or bistoury, division of the cyst after perforation, different chemical agents, have been in turn proposed for the destruction of these tumors, which, as Cooper has said, are but enlarged follicles, developed to excess in consequence of the obliteration of their neck. The most expeditious process, that which appears preferable to all those in which the bistoury has been resorted to, is the spitting of the tumor, performed, but a short time since, by Dr. Robert de Lamballe. A pointed bistoury, plunged into the growth, divides the latter in two, from the basis to the summit; the enucleation of the two halves is afterwards accomplished with extreme facility. A plain dressing and slight compression suffice for the rapid cure of the wound, which leaves but a linear scar. This *modus operandi* is not more free from disadvantage than other processes of excision with the bistoury, and for this important reason Mr. Jobert has returned to the old method of cauterization.

Cauterization, in reality, is not, as certain quacks have pretended, a new means of destroying wens without any operation of the knife. Chopart's excellent treatise on this subject is known to all as well as the comparative experiments made by this author on the action of the various caustics.

In the last century, Téton having gone on a visit for some time to the Marquis de Turgot's, relieved several persons there from these cysts, by touching with a straw, steeped in nitric acid, the central point of the tumor. Téton had seen this process employed by an itinerant practitioner, and, as a judicious observer, he had remarked that the patients recovered without erysipelas, a common accident, which it was sought to avoid

by abstaining from the bistoury. But, however, notwithstanding the success obtained by caustics, the knife was resumed and, in an article published in 1836, on wens in the *Dictionnaire de médecine et de chirurgie pratiques*, Blandin does not even mention cauterization. Blandin handled the bistoury with admirable dexterity; but, had he not prematurely died, he would have renounced it in the treatment of wens, for, at the end of his career, he one day extirpated a very small cyst from the scalp in a woman of 25 years of age; it was so trifling that the operation was performed in his consultation-room. The next day the wound became painful, erysipelas set in, and on the fifth day the patient died.

If caustics were relinquished for so long a time, although Dupuytren acknowledged their advantages, it is because caustic potash and mineral acids were not easy of application or constant in their action. In using them, it was necessary, as Boyer says, to apprise patients that the cicatrix would be extensive and deformed. But this is no longer the case. With Vienna paste, soft or solidified, the eschar can be mathematically circumscribed and a cicatrix obtained, which is almost imperceptible. Mr. Guersant, a very short time ago, destroyed in this manner a small wen in a child eight years of age. He took a piece of adhesive plaster in which he cut a hole in the shape of a myrtle-leaf, representing in extent half the eschar he wished to obtain; the plaster was applied to the tumor and covered over with Vienna paste. At the end of five minutes, the caustic was removed with a spatula; the skin, which remained bare, was washed, and, on the eighth day, the cyst fell off with the eschar.

Dr. Robert recently related, in one of his conferences, that he had removed wens by that method a hundred times; his process is the same as Dr. Guersant's. That very day, a woman thus operated on in his wards, brought her tumor, which united with the eschar and reduced to very inconsiderable proportions, resembled a flat-headed nail. On the fifth day the eschar still adhered to the wen, but its edges became inflamed and the elimination took place, leaving a bleeding wound which healed in three days. "The eschar," says Dr. Robert, "must be left exposed to the air, patients must walk, attend to their ordinary avocations, without resorting to the poultices or emollients; they need entertain no apprehension of erysipelas or any serious accident whatever." This skillful surgeon has cauterized wens as large as walnuts or apricots; he has removed as many as twelve in the same person. "The question, in this case," says he, "being complicated neither by the number nor the size of the tumors."

Professor Jobert has also renounced the knife in favor of cauterization in the treatment of wens, and his destructive process is more simple than that we have just described; this surgeon merely paints the tumor over with Vienna paste, in a slightly liquid state. He recommends that the powder employed in this case should be fresh, a precaution without which the paste is impregnated with the moisture of the air and acts less quickly. We saw two months since Mr. Jobert cauterize, in a carpenter forty-nine years old, four wens, three of which were melicerous, and the fourth atheromatous, of eight years' standing. One of these growths was fluctuant and threatened to burst. All four were covered with a thin layer of caustic, which was allowed to remain on for seven minutes and a half. The patient was taken back to his bed and, after two hours' repose, he went out bare-headed. The fluctuant tumor became hard and parchment-like, and, instead of coming out, its contents became coagulated. Subsequently the eschar fell off and naught remained but unimportant scars.

Finally, wens may be removed by perforating cauterization. Dr. Alphonse Amussat, who has long used caustics with great dexterity, has destroyed a great number of these tumors by cauterization applied in the following manner:

Taking a stick of Filhos caustic of the size of a piece of solid nitrate of silver and sharply pointed, he perforates the tumor in the middle and upper part, by communicating to the caustic a rotary motion. The cyst being opened, the matter it contains is forced out, and the internal surface of the sac is cauterized with the blunt end of the same stick of caustic. When this is done, a small quantity of the paste of chloride of zinc, in equal parts, is introduced into the cyst and is left there from two to six hours, according to the degree of thickness of the parietes of the latter; the paste is then removed and the tumor is left exposed to the air until its complete cicatrization.

This process, which appears to be less simple than the preceding, has, according to its author, the advantage of cauterizing and of destroying cysts of long standing; in addition to which it transforms them into an imputrescible eschar, which falls off while reparation is being performed and the falling off leaves after it but a small sore, soon replaced by an insignificant cicatrix.—*Championniere's Journal.*

THERAPEUTICAL RECORD.

Favus.—In a letter addressed to the *Raccoglitore medico di Fano*, Dr. Malago of Ferrara, expresses himself as follows, on the subject of a new method of treatment of favus:

"I have succeeded in radically curing favus, in a space of about eight minutes, by the use of the bi-basic sulphuret of lime. I have tried this remedy at the civil hospital in six children varying in age, from three to twelve years; a single application on the diseased part is sufficient, and twice only was I compelled to resort to it a second time after a few days interval. It should be used with much caution, in the shape of a warm and soft paste which is laid over the parts with a painting-brush; it is a caustic, and, in the case of favus dispersus, the action of the remedy must be carefully limited to the diseased parts of the scalp.

"The hair should, previously to the application of the remedial agent, be shaved as close as possible. The operator then spreads a layer of the sulphuret over the tubercles, but the paste must be very warm or no beneficial effect will be produced; it is left for six or eight minutes in contact with the diseased skin, and the patient experiences no pain; it is at the expiration of that period removed with another painting-brush impregnated with cold water, or merely by fomentations.

"The substance here recommended consists of dry sulphuret of lime, to which is added recently slaked and softened lime, hence a calcareous salt with a double basis. The mixture of the recently slaked lime with the sulphuret should be made under the influence of heat and shortly before the application of the remedy, as the sulphuret is liable to harden on cooling."

Pomade for Eczema of the Hands.—We find, in the *Bulletin de thérapeutique*, that Mr. N. Guillo, physician of the Hôpital Necker, prescribes with advantage in eczema of the hands the following ointment:

R. Adipis,	3i.
Sodæ subcarbonet,	} aa ½ to 3i.
Ol. cadini,	
Picis liquidæ,	

A Liquid Dentifrice for Smokers.—The *Art dentaire* describes a preparation, which its inventor, Mr. Chevalier, represents as removing the offensive condition of the breath

after smoking, and also advantageous as a confection, to remedy the effects of softening of the gums with fetid ulceration. Mr. Chevalier prepares his wash as follows :

R. Calcis chlorinat. exsicc. et pulv.	3ij.	
Aq. destill		} aa 3ij.
Alcohol rectif Sp. gr. 36		
Ol. ess. caryophylli.	2 min.	

Dissolve the chloride, elutriate, filter and add in the first place the spirit, and subsequently the essential oil. Half a tea-spoonful should be poured into a tumbler, and used to rinse the mouth and cleanse the teeth.

Of Sulphur taken internally, and as a topic, in the treatment of Pseudo-Membranous Angina and Croup.—We have not a sufficient number of facts to authorize us to consider sulphur as a remedy for the daily increasing ravages of diphtheria; but we have reason to believe, from observations personal to ourselves, that this agent already used by Dr. Duché, as a preservative from diphtheritic angina might likewise present a valuable resource in the case of confirmed croup. Four times this year have we had the gratification of seeing cured, under its influence, children who seemed doomed to certain death.

Although this medicine can be ingested in various forms, our experiments have borne on sublimed sulphur (flowers or milk of sulphur) alone. We have exhibited it as an insufflation into the pharynx, frequently repeated, and internally, mixed with honey, in tea-spoonfuls from time to time, and in as large doses as possible.

We are but imperfectly acquainted with the mode of action of this substance; but if, as has been stated, the false membranes, which constitute the essence, the predominant character of diphtheria and croup, are really parasitical productions of a vegetable nature, sulphur, being pre-eminently the antidote to parasitic diseases, its use in diphtheria and croup would be perfectly justified. At all events, the success we have obtained seems to us of a nature to encourage practitioners to repeat our experiments, and we have therefore deemed it desirable to make known their results.—*Championniere's Journal*.

L. SENECHAL, M. D., Gentilly (Seine).

Aperient Enema for Intestinal Obstruction and Obstinate Constipation in the Aged.—In the *Journal des Connaissances médicales*, Dr. Caffé inserts the formula of an enema, which has been frequently used with success, in the course of his long career, by our respected fellow-practitioner, Dr. Richart, in

cases of intestinal obstruction in aged subjects liable to obstinate constipation. The following is the formula :

R. Decoct fol. malvæ sylvestris, meliloti	
et anthemidis,	9 oz.
Steep in this decoction, during two	
hours, a large handful of fresh and	
pared rue, strain; dissolve	
Sal. ammon.	1½ dr.
Add: Ol. Juglandis.	} aa 2 oz.
Mel. mercurialis,	

To be taken in two doses, at two hours interval, in a common enema.

Test for Sugar in Urine.—*L'Union Médicale* has given its readers long scientific details respecting the best method which the practitioner can use for the purpose of ascertaining the presence of sugar in the urine of diabetic patients; and this conclusion is satisfactory, as it shows that the method in ordinary use is the best of all methods: "It is evident," the report says, in conclusion, "that for ordinary use of practitioners, the test by the aid of caustic potash, or by lime is sufficient. A glass tube, a spirit lamp, caustic potash, or a bottle containing milk of lime (*lait de chaux*) are all the articles necessary for the purpose."

Ascarides.—Dr. Compérat has got a cure for ascarides, which has never failed in his hands. It is a simple injection of water, containing five, ten, fifteen, or twenty drops of sulphuric æther, according to the age of the individual, and repeated more or less frequently, according to the number of the animals present. This agent, he says, has a double advantage. By its subtilty it readily enters into and destroys the larva; and by its antispasmodic powers it allays the spasmodic and nervous symptoms produced by the animals.

Diarrhœa.—Dr. Weisse, Director of the Children's Hospital at St. Petersburg, asserts, after an experience of twenty years, that, in the colliquative diarrhœa of children at the breast, raw meat reduced to a pulp is a specific remedy. As the use of this remedy for the purpose indicated, has become very general at St. Petersburg, it would be interesting to know whether intestinal entozoa have increased of late years among these younger objects of medical art.

Treatment of Dyspepsia.—*Messrs. Editors,*—In the course of a long practice in cases of indigestion, I have found the

following prescription to have done good service. R. Prep. carb. iron, calc. magnesia, pulv. elm bark, each ʒi. ; pulv. cubebæ, ʒss. M. Take a tea-spoonful, half an hour before eating, in half a tea-cupful of water. A PRACTITIONER.

Indigo, a Test for Glucosis.—Mr. Mulder, in the *Archiv. der Pharm.*, states that glucosis deprives indigo of its color, upon the addition of a small quantity of caustic soda or potash; the activity of the reaction is increased by heat. The blue color returns when the fluid is shaken, and if instead of water alcohol has been used, the indigo deposits in crystals.

Ascarides.—During forty years of practice Dr. N. Smith, in America, never found assafoetida and aloes fail in the treatment of ascarides. He seems to have used the remedies in the form of tincture given internally.

Ascarides.—M. Bourgeois d'Etamps asserts that the introduction of mercurial ointment into the rectum has never failed to effect the destruction of these animals in all the numerous cases in which he had tried it. And he adds, that it was only in those cases in which other remedies had failed that he had used it. In the case of a child, the mother is directed to introduce into the rectum, as high up as possible, a piece of the ointment on the end of the finger. A grown-up person can do it for himself. All itching, &c., at once ceases; but it is advisable to repeat the introduction three or four times. The small quantity of mercurial substance requisite for the destruction of the animals is really astonishing. No doubt the glysters of M. Legroux, in which the mercurial ointment is held in suspension, acts in a similar way, but they are more complicated in use. M. Bourgeois d'Etamps suggests, that at all events, if the mercurial ointment is thus used, it might be dissolved in oil, and so injected. Be this as it may, its direct action is so marked as a destroyer of the ascarides, as to place it, in his opinion, above all other remedies.

Cod-Liver Oil in a Palatable Form.—M. Bassi recommends a preparation of cod-liver oil, which "may be taken not only without difficulty, but with pleasure. Take 250 grammes of white bread; this is broken into pieces, and moderately roasted; it is put into a tinned vessel with two kilogrammes of water, which by decoction is reduced to one-half. This is then passed through a sieve, and lightly squeezed. The liquid is then exposed to a gentle heat, until it has taken a gelatinous consistence. Then add to it 100 grammes of white sugar and 60

grammes of isinglass. It is then removed from the fire, and left to cool. Next is to be added 2.50 grammes of tartaric acid, and the whole well mixed. Of the jelly of bread thus prepared is taken: jelly of bread 120 grammes, cod-liver oil 30 grammes, distilled canella water 15 grammes, essence of lemon 12 drops. Mix these well in a glass mortar. Under this form, the cod-liver oil may be administered readily in large doses."—*Bullet. de Thérap.*

Rheumatismal Pains in Scarlatina.—M. Trousseau has recently asserted that rheumatismal pains are present in one-third of all cases of scarlatina. The reason persons do not observe the fact is, that they don't look for it. During seven years at the Hôtel-Dieu, although he had noted every case of scarlatina, he had himself never observed the fact; the patients do not complain of pain in the joints; the pains must be sought for. It is just the same with the orchitis of variola, as pointed out by M. Bérard. Sydenham, who had seen so many cases of small-pox, had never observed it, nor had he. M. Trousseau however, in speaking of these pains, wishes it to be understood that he is referring only to cases of scarlatina in the adult.

Collodium in Puerperal Peritonitis.—M. Latour relates a case in which an alarming condition of puerperal peritonitis was speedily cured by spreading a layer of collodium over the surface of the abdomen. This practice he adopted in consequence of his theory that inflammation is but a local exaggeration of animal heat, and that the immediate action of the air on the skin is one of the indispensable conditions of the production of this heat.—*L'Union Médicale*, No. 3.

Camphor as an Ectrotic in Variola.—Chance first taught Dr. Neubold a fact which he has since repeatedly verified, that if the pustules of small-pox are from the beginning covered with linen, upon which camphor has been rubbed, they will dry away without passing through their various stages. He finds also that the administration at an early period of a demulcent drink, containing a little camphor, expedites the progress of the febrile stage.—*L'Union Médicale*, No. 94.

Disuse of Mercury in Edinburgh.—A correspondent of the London Lancet writes as follows: "Professor Syme never gives a particle of mercury in any form of disease; and this after thirty-six years' experience. Professor Bennet never gives mercury, except as a purge; and in his wards I have seen as severe cases of iritis as ever I saw in the eye wards

get perfectly well, without one particle of mercury, within the usual time. I have also seen Dr. Bennett treat severe cases of pericarditis most successfully without mercury."

Disinfectants in Paris.—Ever since Messrs. Corne and Demeaux proposed sulphate of lime and coal tar as a disinfectant, purifying agents have been the order of the day. The merit of the discovery was, of course, at first disputed; and every one who thought he could contrive some disinfecting compound sent papers and samples to the Academy of Medicine or of Sciences. The last applicant is M. Boinet, well known by his works on iodine, who, in a paper read September 20th, before the Academy of Medicine at Paris, contends that the foulest sores can be rendered perfectly sweet by applications of tincture of iodine. There will be no harm in trying this agent, which, no doubt, has already rendered very great service.—*London Lancet*, Oct. 8.

Calomel Insufflation in Diphtheria.—M. Bontemps performs insufflation with a powder composed of five parts of animal charcoal and half a part of calomel—the false membranes rapidly disappearing under its use, providing that they have not invaded the larynx, when the remedy, like so many others, fails.—*Gaz. des Hôp.*

EDITORIAL AND MISCELLANEOUS.

TO OUR PATRONS.

AN apology and explanation is due to our friends and readers for the delay attendant upon the publication of this number of the Journal. Owing to a necessary change of ownership, which required that new arrangements should be made for the future prosecution of the work with vigor and success, it was almost impossible for us to prepare as we wished to do, our usual issue for November, and therefore we now present the last two numbers of volume *thirteen* under the same cover, with index, title-page and list of contributors complete.

We hope that our old and faithful patrons will approve of the efforts we are about to make for the future prosecution of our editorial task with renewed zeal, and with greatly increased advantages, both of a scientific and business character; and we earnestly invoke the aid of every true friend of Southern Medical literature to support us in the attempt.

NEW ARRANGEMENT FOR 1860.

THE Virginia Medical Journal will hereafter be conducted by J. B. McCaw & Co., the late publishers having disposed of their interest in the periodical. It is but an act of simple justice to these gentlemen that we should here declare our lasting obligations to them for their unselfish and illy requited efforts in the cause of a home medical literature for the last eight years. To WM. W. DUNNAVANT, Esq., especially, is due the thanks of our profession for his long and patient co-operation with us in this difficult task, and if the Journal has done anything to promote the honor and dignity of the profession—and may we not hope that it has not existed in vain?—a large amount of this service is due to his public-

spirited exertion and enterprise. May we not then with propriety call upon every delinquent name on our list to come forward promptly and pay their past dues as a small offset for the time and expense which he has bestowed upon them.

We also desire to express our thanks to our faithful and accurate proof-reader, Mr. R. S. Redford, who has after a tutelage of eight years in reading bad writing, construing ungrammatical sentences, and deciphering the technical terms and abbreviations of medicine, succeeded in freeing the Journal almost entirely from those typographical errors which so frequently disfigure such publications.

PROSPECTUS.

THIS Periodical, in commencing its *seventh* year, will be published under the title of the MARYLAND AND VIRGINIA MEDICAL JOURNAL.

W. CHEW VAN BIBBER, M. D., Secretary of the Baltimore Pathological Society, a gentleman favorably known to the profession of his own and other States as a zealous and well-informed medical scholar, will be associated with the present Senior Editor in the editorial control of the work, and we will be supported and strengthened in the Scientific Department of the Journal by the following eminent gentlemen as Co-Editors:

NATHAN R. SMITH, M. D., Professor of Surgery in the University of Maryland;

SAMUEL CHEW, M. D., Professor of the Practice of Medicine in the University of Maryland;

LEVIN S. JOYNES, M. D., Professor of Physiology in the Medical College of Virginia;

CHARLES BELL GIBSON, M. D., Professor of Surgery in the Medical College of Virginia;

FRANCIS DONALDSON, M. D., Professor of Materia Medica in the Baltimore College of Pharmacy;

A. E. PETICOLAS, M. D., Professor of Anatomy in the Medical College of Virginia;

CHRISTOPHER JOHNSTON, M. D., Professor of Microscopic and Comparative Anatomy in the Baltimore Dental College;

CHARLES FRICK, M. D., Professor of Materia Medica in the University of Maryland;

CAMPBELL MORFIT, M. D., late Professor of Chemistry in the University of Maryland;

GEORGE A. OTIS, M. D., Secretary of the American Scientific Association; and

EDWARD H. WHITE, M. D., Baltimore.

We may also point with pride to the able Corps of Collaborators who have efficiently supported our Periodical in past years, and to the many active members of the Maryland profession who we desire now to enlist in the cause we have in heart.

The Business Department will be under the personal supervision of an active and experienced gentleman, who will devote his time and personal attention to ensure punctuality and accuracy in the conduct of the Journal.

Such are our plans for the future—to concentrate around a common centre the talent, learning and zeal of the SOUTHERN MEDICAL PROFESSION; to build up and strengthen our HOME INSTITUTIONS, and to assert and maintain our independence and self-respect. Shall the effort be in vain?

J. B. McCaw.

INDUCEMENTS TO SUBSCRIBERS, 1860.

EVERY subscriber, who sends five dollars, will receive the JOURNAL, and be presented with a copy of PAJOT'S OBSTETRIC TABLES, translated from the French, with original additions and great improvements—a perfect epitome of the science, and only to be obtained from this office.

Every subscriber, who encloses *ten dollars*, will receive the MARYLAND AND VIRGINIA MEDICAL JOURNAL, the leading British Quarterly (THE BRITISH AND FOREIGN MEDICO-CHIRURGICAL REVIEW), and CHAMPIONNIERE'S JOURNAL OF PRACTICAL MEDICINE AND SURGERY, translated from the French,

and mailed regularly every month, and in addition we will forward PAJOT'S PLATES.

Such inducements have never before been offered to the profession, and we confidently expect that this combination of the leading British, French and American Publications, at the low price proposed, will receive a favorable consideration.

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FEEES FOR PROFESSIONAL SERVICES.

The remuneration for medical, surgical, and obstetrical services have, of necessity, varied very much in different ages and countries, according to the estimate of the services rendered, or the relative value of money. In many countries, towns and cities there are regular fee-bills, regulating the charges for ordinary practice; a custom which we have always regarded as absurd and unjust, since it places, in this particular, all practitioners, whatever may be their respective merits, upon the same level, whereas every man should be permitted to charge according to his skill and the nature of his services, not forgetting the circumstances of his patients.

In looking, not long ago, over some of our papers, our eye chanced to light upon a bill for professional services rendered by the late Dr. James Craik to Captain G. S., of Washington City, the father of a large and highly respectable family, to one of the members of which we are indebted for this interesting document. Dr. Craik was the physician of Washington, and attended him in his last illness, in conjunction with Dr. Dick. The bill is dated 1795, beginning in April of that year, and ending in March, 1799, the entire amount being £66 16s. 6d. It covers more than ten pages of foolscap, and particularizes every item with the same care as a merchant's or grocer's account. The following extract will serve as a specimen of Dr. Craik's charges:

	£	s	d.
For extracting Peter's tooth,	0	3	0
Visit to your lady, and anodyne draught,	0	3	0
Vial of diaphoretic drops for your son George,	0	3	0
A purge,	0	1	3
An emetic,	0	1	6
For bleeding Capt. S,	0	3	0
For delivering your lady,	5	0	0
Visit to your son George, and vermifuge pill,	0	1	3
32 syphilitic pills for Sam,	0	16	0

	£	s.	d.
Visit to your child Harriet, and 2 alterative powders,	0	2	0
Visit to your son George, and vermifuge pill,	0	1	3
8 ounces of injection for boy Sam,	0	5	0
One syringe,	0	3	0
Dressing negro boy's hands,	0	2	6
Visit to your lady, and anti-rheumatic tincture,	0	3	0
Visit to your lady, and opening abscess in breast,	0	5	0
Blistering plaster,	0	5	0
Bleeding,	0	3	0
12 febrifuge powders,	0	6	0
6 ounces best olive oil,	0	2	6
Bleeding negro woman,	0	3	0
“ Master George,	0	3	0
Dose of salts,	0	1	6
Inoculating your child,	1	0	0

Emetics, purgatives, absorbent powders, anodyne draughts, and preparations of bark—powder and infusion—are prominent items of the account.

The custom of presenting items in medical bills has, we presume, become obsolete. It is certainly inconsistent with the dignity of a professional man of the present day to descend to such minutiae. A round statement in dollars should be quite sufficient. Only once, in our whole life, have we been requested so to demean ourselves. We replied, that it was contrary to the habits of professional gentlemen to specify their charges, with the minute exactness of an auctioneer's catalogue, at the same time that we informed our *patron* our ledger was at his service; nay, furthermore, that if in future he wanted our attendance on such conditions, he could not have it. The *creature*, now one of the merchant princes of the city where we then resided, had all his life been dealing in sugar, molasses, and whisky, and could therefore not help following the force of his habits.

Professional services are generally much more highly appreciated in cities and large towns than in the country. In the United States, practitioners are much better rewarded in the South and Southwest than in the North and East; in the slave States universally much more liberally than in the free. The reasons for these practices are obvious. In towns and cities physicians could not live if their charges were not higher than they are in the country; and in the Southern regions of the United States money is much more plenty than among the same number of inhabitants in the North and East.

The highest fees for medicinal services in this country are paid at New Orleans, where the ordinary charge for a visit is

from two to five dollars, while consultation services yield at the rate of from ten to twenty. At Charleston the first consultation fee, established by long habit, is \$14 00, the subsequent ones being each \$2 00. In this city the first consultation visit is usually \$5 00, and those made afterwards \$2 00 each. The fees of surgeons are generally, everywhere, higher than those of physicians.

Since our attention has been directed to this subject, we have examined a number of works in our library with a view of ascertaining the charges, ordinary and extraordinary, of practitioners, dead and living, in different countries and in different ages.

In ancient times some remarkable fees were obtained for professional services. It is related of Charmis, who kept a bathing establishment at Rome, in the reign of the Emperor Claudius, that his regular charge for advice to those who were anxious to avail themselves of his treatment was £800. He was the first water-cure doctor, if we may credit the researches of Dr. Doran, that ever practiced, and he made an immense fortune, such as no brother of the craft of the present day can at all approach.

The most liberal fee of modern times was that received by Dr. Dinsdale, a physician of Hertford, England, for innoculating the Empress Catherine, at whose request he visited Russia, in 1768. The operation was perfectly successful, and such was the gratification of the Empress that she made Dinsdale a baron of the empire, besides presenting him £12,000, and a pension of £500 a year.

The largest fee ever received by Sir Astley Cooper was 1000 guineas. His patient was a man of the name of Hyatt, a retired West India merchant, who was affected with stone in the bladder. The manner in which the fee was presented is worthy of notice. When Hyatt had entirely recovered from the effects of the operation, he requested his surgeon, with his two medical attendants, Dr. Lettsom and Dr. Nelson, to visit him on a particular day. Cooper arrived after the physicians had left the room; he met them down stairs, discussing the liberality of their patient, who had presented each with £300. Sir Astley was cordially received by the old West Indian, and after having chatted a little while, he rose to take his leave, and had got as far as the door, when Hyatt threw his night-cap at him, saying, at the same time, "There, young man, put that into your pocket." Upon examining it, he found a check in it for 1000 guineas.

Hyatt, it would seem, was equally liberal to his apothecary, or regular family attendant. One day, being sent for in haste

to visit his patient, he fell down and hurt his knee, so as to cause him, on entering, to be lame. Hyatt, observing his condition, immediately exclaimed, "Dobson, old fellow, what is the matter?" On learning what the trouble was, he pulled out a £100 bank-note, and applied it to the joint, adding that it was the best plaster in the world for a bruised knee.

A wealthy London merchant, Mr. William Cole, paid Sir Astley Cooper annually, for years, £600, for attendance upon his family.

During the hey-day of his professional life Sir Astley Cooper frequently made 100,000 dollars a year by his practice. Much of this vast sum was received for chamber practice. He had to answer many letters of advice, for which he never received less than a one-pound note, while many yielded him five times that amount.

Dr. Lettson, who was a West Indian by birth, made, in a visit which he paid to Tortala, his native town, soon after having completed his studies in London, nearly £2000 in five months. After he had succeeded in establishing himself in the British metropolis, his income annually ranged from 20,000 to 25,000 dollars. In 1800, he received, in fees, £12,000, or sixty thousand dollars.

Fothergill, the Quaker doctor, did an immense practice. For the last twenty-five years of his life, his fees annually averaged nearly £7000, or about 35,000 dollars. He commenced his practice in 1740.

Mead's income was, on an average, from £5000 to £7000, for many years. He once received 300 guineas for visiting a patient at Ingestree, in Staffordshire. The patient had been very ill, but recovered before the arrival of his great physician.

Dupuytren's income was enormous; he began life as a poor boy, and died worth more than a million of dollars. Graefe, the celebrated surgeon of Berlin, left an immense fortune, the result of his professional labors.

In this country, physicians are not noted for their high charges or great income. One of the largest fees ever received by any one was that of Dr. Ephraim McDowell for the operation of ovariectomy, performed upon a lady in Tennessee, whose husband gave him \$1500. We have heard of a fee of \$5000 being paid to a New York surgeon for an operation for club-foot, but we are unable to vouch for the authenticity of the story. Physick left a large fortune, but rather in consequence of the rise of his estate than of his large professional emoluments. His charges were generally small. A gentleman once handed him a hundred dollar note for attendance on

his wife; but the doctor thinking that it was out of all proportion to the value of his services, returned all but ten dollars.

The salaries of court physicians and surgeons have also varied according to the times in which they flourished, and the respective ranks which they occupied. In the reign of Henry III. of France, the pay of the royal household staff was as follows:

First Surgeon.

Ambrose Paré, 666 livres and 12 sols.

Surgeons-in-Ordinary.

Pierre Pegray, 333 livres and 6 sols.
Antoine Portail, 333 " " 6 "

Assistant Surgeons, Serving each Three Months in the Year.

January, February, and March.

Jacques Guillemeau, 100 livres.
Isaac Bruns, 100 livres.

April, May, and June.

Jehan Lambert, 100 livres.
Jacquese D'Amboise 100 livres.

July, August, and September.

Ismael Lambert, 100 livres.
Hierome De la Noue, 100 livres.

October, November, and December.

Charles Buchalier, 100 livres.
Michael Vandelon, 100 livres.

Louis XIV. seems to have had a high appreciation of the services of his professional attendants. Being affected with anal fistule, an operation became necessary, on recovering from which he exhibited his gratitude by bestowing upon them not less than £14,700, in the following ratio:

To M. Felix,	50,000 crownes	=	£6000.
" Dr. Duquin,	100,000 livres	=	4000.
" Dr. Fagon,	24,000 "	=	1000.
" M. Bessiere	40,000 "	=	1500.
" Four apothecaries, each,	3000 "	=	2000.
" M. Raye, apprentice to M. Felix,	400 pistoles	=	200.

Considering the enormous price paid for the operation, it is surprising that the filthy disease which it was designed to relieve should ever have become the fashionable court complaint. A surgeon at the present day may regard himself as extremely fortunate if he can occasionally get a patient who is able to pay him two hundred dollars for the division of the sphincter muscles, including the after-treatment.

Scanzoni, professor of midwifery in the University of Würzburg, received \$25,000 for attending, a short time ago, the Empress of Russia in her confinement. The prestige with which the favorable reception of this physician at the Russian court invested him, has rendered him the most celebrated accoucheur of continental Europe, and laid the foundation of one of the most aristocratic practices in the world, crowds of the German and foreign nobility flocking to him from all parts.

Medical men sometimes receive, in addition to their regular fees, large presents, either in money, plate, clothing, or wine. Thus, Ambrose Paré, the father of the French surgery, at the siege of Metz, in 1552, had a tun of wine sent to him for curing one of the officers of a broken limb, by De La Roch, with a promise that "when it was drunken he would send me another." The Sultan recently, after his recovery from an attack of ague, in which he was obliged to take an unusual quantity of quinine, the effects of which occasioned symptoms which somewhat alarmed the court, presented his physician, Dr. Caratheodory, precious stones, works of art, and various other articles, valued at between £12,000 and £16,000, besides a handsome estate.

Physicians, on retiring from practice, are sometimes presented with a service of plate by their grateful patrons; and similar compliments are occasionally paid by towns, and cities, in consideration of the services rendered by practitioners during the prevalence of devastating epidemics.

Sometimes, again, the present is in the form of a wife. Thus, Podilirius, whose praises have been sung by Homer, was rewarded by the King of Caria with the hand of his daughter, whose life he was supposed to have saved by bleeding her in both arms, after a fall from the top of a house. Such a gift might not always be agreeable or convenient to the recipient, but it could hardly be otherwise when it comes in the form of a rich princess, as in the case of Podilirius.

Governments do not always reward their subjects in proportion to the value of their services. Jenner, for his immortal labors in vaccination, by which millions of lives have been preserved, received from the British Parliament the paltry

sum of £20,000. Brossard, a French surgeon, in the seventeenth century was richly rewarded by the French Government for the disclosure that agaric would arrest hemorrhage after surgical operations. The remedy was tried, and, of course, found useless, though not until a number of lives had been lost by it. Mrs. Stephens, as late as the last century, obtained a large sum from the British Parliament for making known the supposed virtues of castile soap and egg-shells in dissolving urinary calculi.

The charges for attendance at coroner's inquests are not commensurate with the services exacted upon these occasions. From ten to twenty dollars is the usual fee for making a dissection for the benefit of the public, and even that sum is often grudgingly allowed. In cases of poisoning the remuneration is, of course, more liberal, though seldom adequate. The largest compensation for services of this description ever paid in this, or, perhaps, in any other country, was that recently awarded by the city of New York to Dr. Doremus, Professor of Chemistry in the New York Medical College. The sum alluded to was \$3000, besides \$800 for the outlay of new apparatus. The case was that of Stephens, tried for the murder of his wife by poison. Dr. Doremus was obliged to analyze two entire bodies.

Finally, a good fee is a powerful stimulant, causing the most delightful sensations, and goading a man on to the most vigorous performance of his duties. It increases the pace of the sluggard, and improves the digestion of the dyspeptic. There is not a man in the profession that has not, at times, felt the force of the practice of the celebrated physician of Bath. Finding himself no better for his own prescriptions, he laughingly observed to a friend, "Come, I think I will give myself a fee; I am sure I shall do better then." Putting his hand into his pocket, he took out a guinea, and gravely passing it to the other, he soon got well. Assuredly, reader, there is a great potency in a good fee.

Physicians sometimes place no better estimate upon their services than their patients. A young professional acquaintance recently told us that, not long ago, after having prescribed for a female, she handed him a one dollar counterfeit note, which he did not hesitate to take although he knew at the time it was worthless, believing that it was a fair equivalent for his services. We have not examined our brother's organ of conscientiousness, but suppose it to be very large.

[*N. A. Med. Chir. Review.*]

NATIONAL PECULIARITIES.

THE health of a people must depend, in no small degree, upon the usual quality of its food, and the habits formed in consuming it. And this must be allowed to be true, even while we acknowledge the almost unlimited capacity of the human stomach to dispose of the most varied, and, too often, the most inappropriate articles. Not to dwell upon the peculiarities in diet which are mainly due to climactic influences—such as the enormous ingestion of fatty substances in very cold regions, demanded by the necessities of the human constitution, and the large consumption of fruits and light farinaceous articles in warm latitudes—the every-day usages of the inhabitants of the temperate zones, so familiar to us, are not unworthy of a closer consideration than is commonly accorded to them, both in a hygienic and dietetic point of view.

That no standard can be set up as applicable to all, in regard to the *amount* of food to be taken, is undeniable. Countless circumstances combine to render this a variable quantity; but it may be safely asserted that, generally, far too much food is taken by those whose means allow them to indulge their palates and overload their stomachs. This is true on the sea, as well as on the land; as we lately had occasion to remark, when noticing the dietetics of our luxuriously-appointed steam-packets. If we were to particularize, we should say that the Englishman is more prone to exceed in taking solid food, and the Scotchman in his potations—although we can testify to an improvement, in this latter respect, in many parts of the land of “barley-bree.” The Irishman, when he is provident enough to get anything like abundance, is very apt to combine the faults of his fellow-islanders; and, when transplanted to Scottish shores, testifies his decided preference for their whisky over that of his own land. The American has a fault which is fully as destructive to individual and to national health and vigor, as either of the others mentioned—although the results are not so immediate. We refer to the *rapidity* of swallowing, so long and so unfortunately a characteristic of the inhabitants of the States. This is a trite subject, but not the less a most important one, and which it is the duty of the medical profession always to bring prominently before the people. An adjunct evil is the too great variety of supplementary articles consumed amongst us—an error observable elsewhere, it is true, but, as we think, especially noticeable in our country, and expressed often in the providing of sweetmeats and knick-knacks of various sorts, which tickle the palate, but tease the stomach.

The astonishing quantity of confectionery consumed amongst us can hardly be estimated, but it is both preposterous and enormous. We have heard of young persons at school, who not only lavished all their pocket-money in the purchase of candies, cakes, &c., but even ran largely in debt for similar destructive edibles. This vicious appetite prevails to a greater extent still in hot latitudes. We have known young Cubans, and youth from our Southern States, who had nearly destroyed their health by these deplorable habits.

The influence of different climates must essentially affect national dietetics. We have already intimated our intention of not discussing this portion of the subject. It may be said, however, that the climate of Great Britain seems to allow of the freer use of spirits and malt liquors than our own does, with impunity, and often with benefit. In expressing this opinion, we are by no means contradicting ourselves—there may be intemperance in any country. Yet if the Briton, be he Englishman, Scot or Irishman, habitually take spirits—and it is the exception if he does not—and even freely, not to say very frequently to excess, the constitution of such a man, on the average, endures the habit much better and longer than that of the hard or even the moderate drinker with us. Now, something of this is doubtless owing to the *quality* of the liquors used. There can be no doubt but this is superior in Great Britain. The adulteration of liquors is doubtless great everywhere; but more good wine, whisky, ale, porter, it will be allowable, is obtainable and used in Great Britain than with us. Another thing which has a very strong influence in prolonging the endurance of the spirit-drinker's constitution in the British Isles—and that, even when he does not get the best liquors—is, that, as a rule of almost universal application, nearly all the drinking is done at or after dinner. The stomach, it is easy to see, will far more easily endure this sort of treatment, than it does the *ante-prandial* libations to which it is so constantly subjected, by such crowds, in the fashionable drinking "saloons" and low tippling shops of our large cities. The use of the wines of France and Germany, by the inhabitants of those countries, is rarely, if ever injurious; and the abuse of spirituous liquors there, as is well known, is comparatively very infrequent. With respect to the general immunity of those who drink no spirits *before* dinner, we have lately observed some note-worthy remarks in the Dublin Quarterly Journal of Medical Science for May, 1859, in an article devoted to reviewing Mr. Smee's late work on "Debility and Defective Nutrition." The writer says: "And here, perhaps, we may be permitted to state a conclusion to which our expe-

rience has irresistibly drawn us—it is this, that people who confine their excesses to *after-dinner* potations rarely suffer from delirium tremens. We are acquainted with many members of the old school—a school happily passing from amongst us—who would not consider the business of the day brought to a satisfactory conclusion, did they not go to bed drunk, or, at all events, in a state closely bordering on inebriation, being accustomed for some forty or fifty years of their lives to drink far beyond what is at present tolerated by the usages of society. These parties, to whom we now allude, never suffered from delirium tremens; *but they never drank before dinner*; up to that meal they were constitutionally abstemious." After referring to a remarkable instance of a gentleman (now an octogenarian, and whom his family never remember as having gone to bed sober), who not only was exempt from any ill effects of his long-continued excesses, but recovered well from a fracture of the thigh only a few years since—the reviewer accounts as follows for these remarkable facts: "The explanation of such an exception from what appears to be the curse attached to excessive indulgence in this vice is, we think—that people of these habits are enabled to enjoy, at all events, one, if not two, meals; they make a good dinner, if not a good breakfast, and thus the balance is re-established between the muscular and nervous systems. Be this, however, as it may, the fact stated is the result of no mean experience in such cases—the explanation offered may be taken '*quantum valeat*.'"

If the quality of *bread* may be properly considered as affording an example of national peculiarities in diet—and we certainly think it may—we are sorry to say that our own country does not herein compare favorably with most others. Bread is generally most excellent in Great Britain—proverbially superior in France—but not, in our experience, so good elsewhere upon the European continent. Good bread in the United States is the exception—whether we regard its admixture, preparation or baking. In no article of food, perhaps, should more pains be taken to have it in all respects excellent, and especially when people—as is so widely the practice with us—are constantly *bolting* it, hot and fresh! In the bread line, we may mention, with especial commendation, the oat-cake of Scotland; unrivalled, when well made—no less than the "*parritch*" of the same sweet and fresh oatmeal—as an ingredient of diet—especially where the habit is costive. So that the intended severity of Dr. Johnson, when defining the word oats, is ineffectual to influence those who have had personal experience of their excellence as food for *men* no less than for horses.

The subject of national peculiarities in diet, while it is a most interesting and important one, is rivalled by the individual characteristics which render every man a study to himself, if he would preserve, in the best condition possible, the marvellous structure vouchsafed to him as the tenement of his immortal spirit. It surely behooves mankind—of whatever nation—to eschew all those influences, whether from within or without, which tend to impair the wondrous union of soul and body. Care, anxiety, and turbulent passion of every sort, set at defiance the best rules of hygiene, and render null the greatest triumphs of healthful cookery. We were lately much struck with the following simple, but truthful words which we observed in a Scotch paper. The advice is not new, but it is as good as if it were—and with it we will conclude this already lengthy article.—“**HEAR THE OLD MAN.** The venerable and Rev. Daniel Waldo says: ‘I am now an old man. I have seen nearly a century. Do you want to know how to grow old slowly and happily? Let me tell you. Always eat slowly—masticate well. Go to your food, to your rest, to your occupations, smiling. Keep a good nature and a soft temper everywhere. Never give way to anger—a violent tempest of passion tears down the constitution more than a typhus fever.’”—*Boston Journal.*

THE MARCH OF MIND.

AMIDST all the marchings and counter-marchings which have been going on in modern times, the most forced and rapid movement has assuredly been that which has been quaintly termed the “march of intellect.” But, like other forced marches, it has been attended by some heavy drawbacks; for all forced marches, it is well known, will, if frequently repeated, wear out the finest troops that were ever urged to them. And so has it been with modern intellectual advancement, the rapid progress of which has been attended with those many phases of the “over-worked mind,” of “wear and tear,” “nervous exhaustion,” “premature old age,” &c. that start up before us at every step. It has been affirmed, that although the average duration of life *appears* to be greater now than formerly, there can be no doubt that the power of *vital resistance* has sensibly diminished, and that not only the brain, but other important organs, more readily yield to the influence of disease. It may be true, indeed, that the duration of human life is greater now than

it was a century back. If so, it is mainly due to the correction of some of those terrible anti-hygienic physical influences which environed our ancestors, and cut short their lives. If, together with the improvements which we have gradually made in this respect, we had not—to use a common expression—burnt the candle so much faster at the other end, a yet greater amount of health and happiness would, we firmly believe, have been our lot. But our mental excitement cannot be very easily checked. We have put down the man of muscle from his throne, and elevated the man of thought to his place. It is not in these days the hewer of wood and drawer of water whom we honor; it is the ingenious inventor, the teacher in our broadways, the speculator in our market-place. From the senate to the mechanic's reading-room, all are pervaded by the same aspiring and restless spirit; from the most refined to the most plebeian, from noble to *roturier*, we notice the same effort to work the brain whenever it is possible, in preference to working with hands or feet. And at such a forced march as this, we have, for the last thirty years, been progressing, and at so rapid a rate, that at length we have become nearly breathless in our speed—a speed like that to which our bodily locomotion has attained, in which, steam-projected through the air, we are thrown at the rate of fifty miles an hour from place to place. Thus, as Carlyle forcibly tells us, “the race of life has become intense; the runners are treading upon each other's heels; woe be to him that stops to tie his shoestrings.” Even in those walks of human industry in which mere physical strength still continues to bear a high value—as machinery has not yet displaced it—we find that competition, surplus labor, &c. are ever at work, goading on the exhausted bodily powers to work against time, at over hours, or under some such disadvantageous circumstances, as render the labor to be performed little less than a slave-like task of endurance. If there is unceasing competition in art, science, and literature, so it is to be found struggling amongst mere human machinery. Take Dr. James Johnson's familiar illustration, the coal-heaver upon the banks of the Thames, straining daily, like an Atlas, under the load of “Northumbria's entrails,” which he bears upon his back. Through his stomach and veins pass some three or four gallons of porter six days of the week. Compare him with the barrister, straining his brain during twelve hours of the day from the beginning to the end of term time, with scarcely any exercise of his muscles or physical strength. Nothing can be more striking than the contrast between these two classes of operatives as far as *complexion* is concerned. But wait awhile; let us strip them of their habiliments; wash off the charcoal and hair-powder, and

examine their constitutions. We shall find that the "wear and tear" of body and of mind have forwarded each of them a step or two *in advance* along the pathway of human existence. But it is clear that it is not the *amount* in itself either of mental or bodily exertion that in these modern days proves so deleterious. As the late Dr. Arnold, of Rugby, said, "it is not work that injures a man; it is vexation that does it." Our modern labor is attended with a fearful amount and intensity of *emotional excitement*. Restless thought, hazardous speculations, and momentous undertakings, bring with them sleepless hours of anxiety. These latter it is which have been the cause of that question being lately raised, and which is still *sub-judice*—viz., insanity; does it or does it not increase in these latter times? The following observations from the evidence given by the Earl of Shaftesbury (Chairman of the Commissioners of Lunacy) before the Select Committee of the House of Commons, will well illustrate some of our preceding remarks:

"I dare say many will differ from me, that if there is not an actual increase of insanity, there is developed a very considerable tendency towards it; and I think it arises from the exaggerated state of society; the new state of society in another aspect upon which we are entering. It is impossible not to see the effect that is produced by the immense speculation that takes place amongst all the various small-trading classes and people keeping costermongers' shops, and every one who has £5 that he can invest; they are carrying it on to a very great extent, and the number of disappointments and the great ruin that have come upon so many people, and the horrible distress to which they have been subjected, have had a very considerable effect upon their minds; and society is living in a state of perpetual agitation. It does not signify whether it be political life or literary life. Every one must see, now, that life is infinitely more active and stirring than it used to be; the very power of locomotion keeps persons in a state of great nervous excitement, and it is worthy of attention to what an extent this excitement prevails. I have ascertained that many persons who have been in the habit of travelling by railway have been obliged to give it up, in consequence of the effect upon the nervous system. I was speaking to one of our commissioners the other day, who had just come off a journey, and he said that his whole nerves were in a state of simmer; and he was not able, without some period of rest, to enter upon business. I think all these things indicate a very strong tendency to nervous excitement, and in what it may issue I do not know; but I am quite sure, with regard to persons in that class of life entering into trade, and living in, and very constantly under, the influence of this stir and agitation, that the nervous systems of these persons are in a much more irritable state than they were twenty years ago.....The predominant cause amongst the richer classes of lunatics appears to be a disordered imagination, the pursuit of money, dis-

appointed ambition, or great losses in trade, and sometimes you will find from over-work."

The prolonged and reflective mental labors of the philosophers and lawyers are far less permanently detrimental to the frame than are the intense and highly nervous efforts of the poets and musicians. The great temporary excitement of the young and passionate phantasiist is followed by a depression and renewed by a re-actional emotional pyrexia, much more exhausting to the vital powers than is the more equable and continuous exertion of the ratiocinative faculties of the philologist, the man of science, and the divine. Of the last ten chancellors—e. g., from Lord Thurlow downwards—the youngest is Lord Cranworth, who is about seventy years old. The average age of the ten is something higher than seventy-six years. If, for the purpose of comparison, we take a like number of our more distinguished poets, from Spenser to Byron, we shall find the average age of them to be fifty-two, every one being more than twenty-years younger than the last ten chancellors. Thus is borne out the general opinion, that musicians and poets usually die young, and that philosophers and lawyers do not.*

In the windows of some of our sporting print-shops, we have seen the "Mail Driver" of 1825 represented in contrast with the "Express Driver" of 1855. They are admirably opposed, and form types of the different characters of the respective times, now separated by more than a quarter of a century. The one, a jolly rubicund "John Bull," loaded with capes, top-boots and "Belcher" handkerchief, and strong enough to bear an ox upon his back, is prepared to go soberly and steadily along the road at about ten miles the hour. There is a look of contented, self-satisfied, though good-humored complacency about him, which seems to say—What possible state of matters can be better than the present?

"He whistles as he goes, light-hearted wretch,
Cold and yet cheerful—messenger of grief,
Perhaps, to thousands, and of joy to some—
To him indifferent whether grief or joy."

The other is a pallid, rather meagre and sharp-visaged man, clad in short blue jacket, and devoid of all superfluous clothing or *impedimenta*, but with a restless look, that seems to show his active and anxious mind is accustomed to proceed at a rate of progress analogous to that at which he is soon about to guide

* Westminster Review, No. xxvi, July, 1869. Article, "The influence of local causes on national character," p. 85.

hundreds through the air, and that, instead of being satisfied with repose, it would forever "keep moving."

"The grand debate,
The popular harangue, the tart reply,
The logic and the wisdom, and the wit,
And the loud laugh—he longs to tell them all,
And burns to set th' imprison'd wranglers free,
And gives them voice and utterance once again."

This acute, pallid, meagre man, then, who directs the railroad engine while rushing on at its appalling speed by a slight handle that could be moved by a child, is a type of the strange change which has taken place—the ascendancy of mind over matter. But, as we have before observed, this forced march of intellectual civilization has its drawbacks, and yet we still urge it further! "My brain is burning, I can bear life no longer," said the author of the "Old Red Sandstone," and shortly ceased to exist. "Fits!" says Bernard Lintot, in Pope's pasquinade against Dennis, "a man may well have fits and swollen legs who sits writing fourteen hours a day." The battle of life and death is often fought as really in chambers or in an office as it is on the field. If we were to select a model for the artist, which should portray in allegory the spirit of our times, it would be some such unfortunate as Kirke White at nocturnal study, with wet towels round his heated head, pale, faint and trembling lest his sand should run out ere his insatiable appetite for acquisition and desire for praise should come to be gratified, if not appeased.

VARIETIES.

Medical News and Items.

BIOGRAPHICAL SKETCH OF DR. DEROSSET, BY DR. McREE, JR., OF NORTH CAROLINA.—Doctor Armand John DeRosset, an honorary member of this Society, died in Wilmington, on the 1st day of April, 1859, in the ninety-second year of his age.

His very advanced age, his high professional attainment, his extensive and successful practice, and his devotion to the Medical Profession as student and practitioner, for a period of more than seventy years, entitle him to a biographical notice among the proceedings of our Society.

His paternal ancestors were from Narbonne, France, in the neighborhood of Montpellier, and were of so-called noble blood. "I mention this," says the Doctor himself, in a paper which he addressed to his children at the advanced age of eighty years, "not as entitling us to any consideration or respect, other than such as our conduct and character as men and Christians, endeavoring conscientiously to perform our duty to God and our fellow-men may justly claim." They were Protestants. They were forced to emigrate because of their religious opinions, and the family titles and estates were forfeited because of their emigration. Thus they were compelled to bear their full share of the burdens which were imposed upon the early Protestants, and they were sustained in their losses and governed in their conduct by those high principles which, at a subsequent period, led to the independence of the American colonies, and the formation of the American government. About the period of our Revolution the restoration of the family estate and titles was tendered to an uncle of the Doctor's, upon the condition that he would return to the bosom of the Romish Church, but the offer was unhesitatingly rejected.

His great-grandfather, Louis, was a military officer, holding his commission from the British government. This accounted for the fact that he was a Huguenot, and from the further fact that the English nation claimed the sovereignty of several provinces of France. He held also the Honorary title of "Doctor of Laws," as well as "Doctor of Medicine."

His grandfather, Armand, graduated in 1720, in Basle, Switzerland, and was compelled to emigrate by religious persecution.

His father, Moses John, was born in London, soon after the emigration, and the whole family subsequently came to this country. Here his father married "Amy Ivey," whose sister was married to General Moore of revolutionary memory.

The Doctor was born in New Hanover County, on the 17th day of November, 1767. He was a graduate of Princeton College, studied medicine under the celebrated Dr. Rush, and received his medical diploma from the College at Philadelphia. At his graduation he received the highest mark of distinction, which was then conferred by the College. His thesis was written in Latin and published by the Faculty.

